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OF THE

SOUTH AFRICAN ORNITHOLOGISTS' UNION.

EDITED BY

Dr. J. W. B. GUNNING,
ALWIN HAAGNER, F.Z.S., and B. C. R. LANGFORD.

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PREFACE.

With this, the concluding number of Volume VIII. we must express regret that more material has not been available. We are sure there must be more of our Members who have interesting information to communicate, if only they will do so.

It is not enough for Members, however keen, to take a mere personal interest in Ornithology. If they will not record the results of their observations for their brother Members, the "Union" is a Union in name only.

We are pleased to be able to state that the Transvaal Department of Education, as the result of representations by the S.A.O.U., have had coloured wall-pictures prepared of the more useful and interesting native birds, which it is hoped will soon appear in the schools. This cannot fail to be beneficial, as when the children are made familiar with the birds and their place in nature it will rouse interest in their feathered friends.

THE EDITORS.

CONTENTS.

ROLL OF MEMBERS

AS AT 31ST OCTOBER, 1912.

No.	Year of Election.	Name and Address.
	1909	ABDY, Col. A. J.; c/o Army Headquarters, London.
	1905	ANDERSSON, Col. C. L.; Box 2162, Johannesburg, Tvl.
	1906	BELL, THEODORE; Downside, Epsom, Surrey, England.
	1907	BOLUS, FRANK; Sherwood, Kenilworth, Cape Town.
5	,,	BOOTH, H. B.; "Ryhill," Ben Rhydding, Yorkshire, England.
	1905	BOURKE, E. F.; Box 321, Pretoria, Tvl.
	1904	BRIDGEMAN, R. O. B., Lieut. R.N.; Weston Park, Shifnal, Salop, England.
	1907	BRISCOE, Dr. J. E.; Charlestown, Natal.
	1908	CHAMBERS, ROLAND, R.M.; Lindley, O.F.S.
10	1907	CHUBB, E. C.; Durban Museum, Durban.
	1909	CLARK-KENNEDY, J. W.; Tvl. Police, Johannesburg.
	1906	COCH, MAX; Box 1076, Johannesburg.
	1907	DAVIES, C. G., Sgt. C.M.R.; Matatiele, East Griqualand, C.C.
	1904	DAVY, J. BURTT, F.L.S., F.R.G.S.; Dept. of Agriculture, Pretoria, Tvl.
15	1906	D'EVELYN, Dr. F. W.; 2103 Clinton Av., Alameda, California, U.S.A.
	1908	DORNAN, Rev. S. S.; Bulawayo, Rhodesia.
	1905	DUERDEN, Prof. J. E.; Rhodes University College, Grahamstown, C.C.
	1904	FAIRBRIDGE, W. G.; 141 Longmarket Street, Cape Town, C.C.
	,,	FELTHAM, H. L. L., F.E.S.; Box 46, Johannesburg, Tvl.

No.	Year of Election.	Name and Address.
20	1904	Fry, Harold A.; P.O., Lenz, nr. Johannesburg, Tvl.
	1907	Gilfillan, D. F.; Box 1397, Johannesburg, Tvl.
	1909	Godfrey, Rev. R.; Pirie Forest Mission, King-williamstown.
	1908	Graham, Francis, C.C. & R.M.; Grahamstown, C.C.
	1905	Grant, C. H. B.; Natural History Museum, South Kensington, London, England.
25	1906	Grönvold, Henrik; Natural History Museum, South Kensington, London, England.
	1904	Gunning, J. W. B., M.D., F.Z.S.; Director, Museum and Zoological Gardens, Pretoria, Tvl.
	1912	Gyde, C. E.; Auditor, P.W.D., Pretoria.
	1904	Haagner, Alwin K., F.Z.S., Col.M.B.O.U.; Box 413, Pretoria, Tvl.
	1909	Hale, P. E., Insp. O.R.C. Police; Bethlehem, O.F.S.
30	1907	Halhed, N. G. B., 3rd Battn. Egyptian Army, Khartoum.
	„	Hamilton, Major J. S.; Warden, Game Reserve, Komati Poort, Tvl.
	1906	Hamond, Philip, Lieut. 2nd Norfolk Regt.; East Dereham, Norfolk.
	1909	Hardiman, E. H. M.; Wepener, O.F.S.
	1905	Hatchard, J. G., F.R.A.S.; Loco. Drawing Offices, C.S.A.R., Bloemfontein.
35	1908	Heward, James L.; Yankee-Doodle Mine, Selukwe, S. Rhodesia.
	1912	Hewitt, John, B.A.; Director, Albany Museum, Grahamstown.
	1905	Horsbrugh, Major Boyd, A.S.C.; c/o Cox & Co., Bankers, 16 Charing Cross, London.
	„	Howard, C. W.; Dept. of Agriculture, Lourenço Marques.
	1907	Hudson, C. E.; P.W.D., Pretoria, Tvl.
40	„	Ingle, J. C., F.Z.S.; c/o M. Leibinitz, Esq., Kobeyns Pass, Pilgrims Rest.
	1905	Innes, Dr. Walter, M.B.O.U.; School of Medicine, Cairo, Egypt.
	1908	Ivy, J. Robson; Taxidermist, Church St., Pretoria.

No.	Year of Election.	Name and Address.
	1907	Ivy, Robert H., F.Z.S. ; Grahamstown, C.C.
	1912	Jacottet, Dr. Gustave ; Belfort, Matatiele, East Griqualand.
45	1904	Jeppe, Julius ; Box 60, Johannesburg, Tvl.
	1905	Johnston, C. McG. ; Agric. Soc., Mailland Blgs., Bloemfontein.
	1909	Johnston, K. Cowper ; Westminster, O.F.S.
	1906	Kirby, F. Vaughan ; Game Conservator, Nongama, Zululand.
	1904	Kirby, W. ; Intermediate Pumping Station, Waterworks, Kimberley, C.P.
50	,,	Kirkman, Dr. A., M.D. ; Queenstown, C.P.
	1909	Knapp, Col. ; Kingwilliamstown, C.P.
	1910	Knobel, J. C. J. ; Porter, Reformatory, Retreat, C.P.
	1904	Langford, B. C. R. ; Box 557, Pretoria, Tvl.
	1906	Littledale, H. A. P., Lieut. K.O.Y.L.I. ; The Castle, Cape Town.
55	1905	Loubser, M. M. ; Port Elizabeth, C.P.
	1908	Mally, C. W., U.S.b. ; Entomologist, Dept. of Agriculture, Cape Town.
	1905	Marthinius, Dr. J. G. ; District Surgeon, Wepener, O.F.S.
	1911	Masterson, B. A. ; Grand Hotel, Humansdorp.
	1908	Mörs, F. E. O. ; De Kroon, P.O. Brits, Tvl.
60	1912	Mowitz, L. B. ; 21 Westcroft Square, Ravenscourt Park, London, W.
	1905	Murray, J. P. ; Maseru, Basutoland.
	1906	Nehrkorn, Adolf ; Adolfstrasse, Braunschweig, Germany.
	,,	Noome, F.O. ; c/o Transvaal Museum, Pretoria, Tvl.
	1905	Oberholser, Harry C. ; Biological Survey, Washington, D.C., U.S.A.
65	1904	Percival, A. B., F.Z.S., M.B.O.U. ; Nairobi, Brit. East Afr. Protectorate.
	1907	Péringuey, Dr. L., F.Z.S., &c. ; Director S.A. Museum, Cape Town.
	1905	Pershouse, Stanley, 2nd Border Regt. ; c/o Messrs. Cox & Co., 16 Charing Cross, London.

No.	Year of Election.	Name and Address.
	1908	Phear, H. H.; Box 424, Kimberley.
	1904	Pym, Frank A. O.; Public Museum, Grahamstown.
70	,,	Roberts, Austin; Box 413, Pretoria.
	1907	Roberts, Rev. Noel; Christ Church Vicarage, Pietersburg.
	1908	Robertson, Dr. W.; Bacteriological Laboratory, Pretoria.
	,,	Sclater, Arthur L.; "Helvetia," Southern Melsetter, S.E. Rhodesia.
	1906	Sheppard, P. A.; Vumba Exp. Stn., nr. Macequece, P. E. Afr.
75	1904	Skea, Ernest M.; c/o Rose Deep G.M.Co., Johannesburg.
	,,	Sparrow, Major R., M.B.O.U.; Rookwoods, Sible Headingham, Essex, England.
	1905	Swinburne, John, M.B.O.U.; Rand Nat. Labour Assoc., Pietersburg, Tvl.
	1904	Swinny, H. H.; Port St. Johns, West Pondoland.
	1907	Swynnerton, C. F. M.; Gungunyana, Melsetter Dist., S. Rhodesia.
80	1905	Taylor, C. H.; Kellowna, British Columbia.
	1904	Taylor, L. E.; Kellowna, British Columbia.
	1907	Theiler, Dr. A.; Taubenhaus Str. No. 10 b, Lucerne, Switzerland.
	1909	Thompson, Chas. S.; High School, San Bernardino, California, U.S.A.
	1906	Thomsen, F.; Govt. Entomologist, Pretoria.
85	1908	Tyrrell, E. G. Harcourt; Greytown, Natal.
	1909	Upton, Capt. C., A.S.C.; 25 Charles St., St. James's Sq., London.
	1905	Wiglesworth, J., M.D., M.B.O.U.; Rainhill, Liverpool, England.
	1909	Wilde, C.; Windhuk, Damaraland.
	1906	Wood, A. R., A.R.M.; Wepener, O.F.S.
90	1904	Wood, John; Box 363, East London, C.C.
	1905	Workman, W. H., M.B.O.U.; Lismore, Belfast, Ireland.

No.	Year of Election.	Name and Address.
		Hon. Members.
1	1909	Allen, Dr. J. A.; Amer. Museum of Nat. Hist., Washington.
2	1908	Bucknill, The Hon. J. A., M.A., F.Z.S.; The King's Advocate, Nicosia, Cyprus.
3	1907	Hartert, Dr. E.; Director Tring Museum, Tring, Herts, England.
4	1909	Herman, Dr. Otto; Hung. Central Bureau of Ornithology, Budapest.
5	1904	Reichenow, Dr. A.; Kaisl. Zool. Museum, Invalidenstrasse, Berlin, Germany.
6	,,	Sclater, P. L., D.Sc., F.R.S.; Odiham Priory, Winchfield, Hants, England.
7	1907	Sclater, W. L., M.A., F.Z.S.; 10 Sloane Court, London, S.W.
8	1904	Trimen, R., F.R.S.; c/o Entomological Society, London, W.

LIST OF PAPERS, &c.,

IN THIS VOLUME.

Vol. VIII., No. 2, *December* 1912.

SUBJECT-MATTER INDEX,

INCLUDING NAMES OF CONTRIBUTORS.

PLATE: South African Lanner Falcon (*Falco biarmicus*).

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Vol. VIII. JUNE 1912. No. 1

I.—*On some Birds in the Durban Museum.*

By E. C. Chubb, Curator.

Whilst engaged in cataloguing the birds in this Museum lately, I wrote the following notes regarding certain species which appear to be of interest on account of their rarity in South Africa, or because they have not been hitherto recorded from Natal, as far as can be ascertained with the limited literature at my disposal.

1. Colymbus cristatus, Linn. Crested Grebe.

Although not uncommon in other parts of South Africa, it has not until now been recorded from Natal. There are two examples labelled "Natal" in the collection.

2. Hydrobates pelagicus (Linn.). Storm-Petrel.

The Museum possesses a specimen of this bird which was obtained at Durban in 1888.

3. Anas capensis, Gm. Cape Wigeon.

There are two females of this species in the collection. They were taken near Durban.

4. Dendrocygna fulva (Gm.). Whistling Duck,

Very few occurrences of this Duck in South Africa have been noted, and they are from Lake Ngami, the Zambezi

and Botleti Rivers, so that an example from the neighbourhood of Durban in this Museum is the first record of it in the eastern portion of South Africa.

5. Casarca cana (Gm.). South African Sheldrake.

The South African Sheldrake, which appears never to have been recorded from Natal, is represented in the collection by two females, labelled respectively "Natal, presented by H. Buck 1893," and "Natal, presented."

6. Terekia cinerea (Güld.). Terek Sandpiper.

Records of the occurrence of this species in South Africa are very scanty. There is one example in this Museum which was obtained in the vicinity of Durban.

7. Totanus ochropus (Linn.). Green Sandpiper.

Sclater doubts the occurrence of the Green Sandpiper in South Africa, remarking as follows:—"The occurrence of the Green Sandpiper in South Africa rests on the authority of Mr. Layard, who stated that he received several examples from Mr. Arnot, procured near Colesberg, and that it also occurred at Zoetendale Vley in Bredasdorf, near Knysna, and at the Kowie River mouth. No other observer or collector, however, has noticed the occurrence of this Sandpiper in South Africa, nor is there a South African example in the South African Museum. It is quite possible, therefore, that Mr. Layard was mistaken in regard to the matter." A specimen from Natal in the Durban Museum goes to show that the species, at any rate occasionally, visits South Africa.

8. Limnobænus marginalis (Bp.). Hartlaub's Crake.

An example of this rare Crake was obtained on the Durban Racecourse by the late Mr. A. D. Millar and presented by him to the Museum. It has only previously been recorded from Ondonga, Damaraland, where it was obtained by Andersson, and East London, whence the Cape Town Museum possesses a specimen.

9. Nycticorax leuconotus (Wagl.). White-backed Night-Heron.

There are several examples of this species in the Durban Museum, all of which were obtained in Durban Bay, where it is not uncommon at times. There appear to be only two previous records of it from South Africa.

10. Otogyps auricularis (Daud.). Black Vulture.

An example of the Black Vulture obtained in Zululand by Mr. C. J. Crofts in 1903 is preserved in the Museum.

11. Falco cuvieri (A. Smith). African Hobby.

A female shot on the Berea, Durban, by Mr. A. D. Millar on 30th August, 1905, is in the collection. There are only two previous records from South Africa, viz. : the type obtained by Sir Andrew Smith on the Kei River in Eastern Cape Colony, and a young specimen from near Durban in the South African Museum, Cape Town.

12. Scotopelia peli (Temm.) (Bp.). Pel's Fishing-Owl.

A female shot on the Pongola River, Zululand, in August 1908, by Mr. Frank Fynney, is now in the Museum. There have only been two previous records of this Owl in South Africa, as far as I am aware.

13. Halcyon chelicuti (Stanley). Striped Kingfisher.

An example from the right bank of the Lower Tugela River is the first instance of the occurrence of this Kingfisher in Natal, although it has several times been secured in Zululand.

14. Hemipteryx minuta, Gunning. Little Pine-Pine Warbler.

The Museum possesses a pair of this species and nest, which were obtained in the neighbourhood of Durban in 1909 by Mr. H. M. Millar. They agree very well with Dr. Gunning's description.

15. Acrocephalus palustris (Bechst.). Marsh-Warbler.

The only records of the Marsh-Warbler in South Africa are those of Shelley (near Durban in 1874) and Boyd Alexander from (Zambezi River). Mr. H. M. Millar shot a male near Durban in April 1910 and presented it to the Museum.

16. Eremomela scotops (Sund.). Dusky-faced Bush-Warbler.

There is a pair of this rare Warbler in the Durban Museum. They were shot near Durban by Mr. H. M. Millar.

II.—*Notes on the Migratory Birds of the Buffalo River Basin.*

By the Rev. Robert Godfrey.

I.—Our Summer Migrants, 1910.

The object in writing this article is to endeavour to rouse a little more enthusiasm amongst Members and others in the interesting subject of migration. Meagre as may be the amount of information here compiled, it is enough to show how much can be done by our local observers, were a systematic attempt to write down on the spot all observations that are made, and to communicate these to some central bureau, such as the Migration Committee of the S. A. O. U.

Swifts.

The White-bellied Swift (*Apus melba africanus*) was seen at Lovedale on August 10th, and was believed to have newly arrived from its winter-haunts in Central Africa. But Mr. John Wood writes to say he has seen this Swift about East London in every month of the year, and he raises the question regarding its status as a migrant. Some, he says, can migrate only partially. It is hoped to prove soon whether it is in the Buffalo Basin all the year round or not.

With regard to the Black Swift (*Apus barbatus*) similar information is required. Rev. J. Henderson Soga forwarded

the wing of one shot on September 26th, with the remark that he had seen the bird about a week before also. On the last day of September the species was very common at Ntaba Kandoda, noisily squealing over the Debe Flats.

No note of interest has been received on the White-rumped Swift (*Apus caffer*).

Swallows.

The White-throated Swallow (*Hirundo albigularis*) was the harbinger of our migrant Swallows, appearing on August 28th at Kingwilliamstown, and being found alone for some time thereafter. Near Kingwilliamstown it is not a common species, although it no doubt nests on some buildings near the town. On October 3rd one of these birds was flying about inside a school at Tyusha, quite regardless of children and teacher.

The local South African Cliff-Swallow (*Petrochelidon spilodera*) appeared at its old haunts early in September. Mr. W. J. A. Moir, of Blythswood, reports that they were first noticed there on the afternoon of the 3rd, but that they were not back in all their strength till the 5th. At Emgwali these birds were noticed at their old nests by Miss Douglas on the 10th. In addition to the colonies at these two institutions, there are others at Stutterheim and at Nqamakwe, and any information as to the year when this species first appeared in any of these four localities would be most welcome.

The first record this season of the Large Stripe-breasted Swallow (*Hirundo cucullata*) is September 22nd, when five birds were seen at the Buffalo Bridge, Kingwilliamstown. This record is one day later than last year. On September 26th two birds were seen at Pirie. At the latter place the birds began building in their old site under the arch of a window inside a church. The main portion of last year's nest had fallen, leaving only the funnel entrance intact. As we saw the new nest growing in the old spot, we waited with interest to see if the builders would fit the nest to the

old funnel. They worked on till they reached the funnel, and then gave a twist to the right, finishing off with a new funnel placed at right angles to the old one.

The only record received of the Lesser Stripe-breasted Swallow (*Hirundo puella*) is from Elliotdale, where, on September 26th, Rev. J. H. Soga saw a few of these birds mingling with Rock-Martins (*Riparia fuligula*) and Black Swifts (*Apus barbatus*).

Information regarding the movements of the European Swallow (*Hirundo rustica*) is very much desired. These birds are now to be met with flying everywhere over the veld, but few definite records of their first appearance in the district seem to be obtainable. On November 6th, and again on November 8th, I saw birds which I took to be European Swallows, but I was not satisfied of the correct identification till the 10th.

The most interesting of the Swallow records is that relating to the Pearl-breasted species (*H. dimidiata*). On November 16th, a little to the west of our district proper, I noticed two young Swallows sitting together on a bare twig of a tall tree, and waiting patiently for the arrival of the food-bringer. From the time that elapsed between successive visits, I think only one parent was feeding them, the other may have been brooding the second time. The adult bird in feeding the young generally hovered beside them for a moment only and was off again, sometimes, however, it would settle on the tree, and on one such occasion it gave me a specially good view of it. The bird was wholly blue above, with no red on the forehead; there was no black bar of any kind on the under surface. In the case of the young I occasionally caught a glimpse of a narrow but distinct white bar on the wing.

Storks.

A pair of White Storks (*Ciconia ciconia*) were seen on the Debe Flats on June 20th. I had occasion to pass the same place on July 24th and I saw one of them still at the old spot. I am thus strengthened in my conviction that

occasionaly this bird remains with us all winter. The summer invasion of White Storks began in November. At Pirie they were first seen on the 12th, and very soon afterwards they were very common all over the district. On the 28th, one hundred and fifty-four of these birds were counted at sunset at their roosting-haunts in the forest. The present season promises to be a great Stork year; and readers are again reminded to keep a sharp look-out for individual Storks bearing rings on their legs.

The Black Stork (*Ciconia nigra*) was seen at its old haunt near Pirie on September 29th and the two following days. As in 1909, so again this year only one pair of these birds were observed. Except in colour the Black Stork is the exact counterpart of its white relation, its mode of flight and the arrangement of its limbs in flight being exactly similar. In the Black Stork the head, neck, upper breast, and upper surface are black, while the body and the axillary feathers are white. Storks carry their long legs straight out behind them in flight, and keep their long neck at full stretch forward. This arrangement is a matter of convenience, as it presents the least possible opposition to the air; but that it is not a matter of urgent necessity is shown by the bird altering this disposition of its limbs in flight on occasion. I have watched a Black Stork while high in the air lower its head, and at the same time bring forward one of its feet to meet the lowered head and deliberately claw its bill with its foot, while it continued its course through the air.

Cuckoos.

Of the eight species of the migratory Cuckoos found in the district, the best known in the Red-chested Cuckoo (*Cuculus solitarius*). This is a very shy bird, generally defying the efforts of an observer to detect him; but, as he is exceedingly noisy, he cannot long remain undiscovered in any locality. He never tires of uttering his bold triple cry, but he gives no offence to either bilingualists or trilingualists, as he is perfectly understood in all three South African languages!

To the Dutchman he continually cries "Piet myn vrouw," to the Kaffir he says "Pezu kom kono," and to the Englishman he speaks in the borrowed dialect of a North American Nighijar, repeatedly reiterating "Whip poor Will." Not content by proclaiming his presence by day, he sometimes calls long after the sun has set, or, put it otherwise (as circumstances sometimes demand it should be done), long before the sun has risen. I have notes of its calling at 10 P.M. and at 2 A.M. The earliest record for the Red-chested Cuckoo this season is given by Donald Henderson, who heard the bird at Lovedale on October 9th, one day later than the earliest record of 1909. At Pirie it was heard by Miss Carrie Ross on October 22nd. My own earliest record this year was on October 28th at Amabele.

The Black-crested Cuckoo (*Clamator serratus*) arrives about the same time as the Red-chested Cuckoo and is found commonly in our district in scrubby country. Like the Red-chested Cuckoo (*Cuculus solitarius*) it is a very noisy species, but it does not defy observation as the latter bird does. The Black-crested Cuckoo (*Clamator serratus*) is wholly black, with a white bar across the wing which shows up conspicuously in flight. Mr. Moir, of Blythswood, noticed it there before October 6th; I heard it for the first time this season at Toleni on October 30th.

The Black Cuckoo (*Cuculus clamosus*) is a much rarer species in our area than either of the preceding, though it, too, possesses a powerful voice which prevents it frombeing overlooked in any of its haunts. I have met with the bird at Pirie, but in my wanderings during the present summer I have twice been on its track. As yet, however, I am not in a position to speak definitely about it. This species was heard near Komgha on November 5th by Veldman, but it was in these parts some time before that date, calling unheeded and unknown.

The three Green Cuckoos have arrived unobserved this year. From the middle of September I kept listening for the Emerald Cuckoo's (*Metallococcyx smaragdineus*) call, "Pretty Georgey," but I did not hear it until November 14th,

which is long after the date of his arrival. The Emerald Cuckoo prefers the thick bush, but is also found in some of the kloofs : during the past season I heard it in the kloof below Healdtown Institution. First records of the Didric and of Klaas' Cuckoo are also among the dates wanted for the present season.

Birds of Prey.

Of our migratory Birds of Prey the species most easily recognised is the Egyptian Kite (*Milvus ægyptius*). It can be distinguished at a glance from all other local Birds of Prey by it forked tail, which is evident when the tail is spread. The wings also are of a distinct type, being long and sickle-shaped. The Egyptian Kite arrived this year at Pirie on September 23rd ; it occurs commonly along the base of the mountains, and will remain with us until the latter half of February.

A much smaller Bird of Prey, Naumann's Kestrel (*Cerchneis naumanni*), is visiting us again this year, as the Curator of the Kingwilliamstown Museum informs me. Naumann's Kestrel is much lighter in colour than our common resident species, and its habit of associating in companies will lead those who are observing our migrants to suspect its presence. The birds haunt the veld during the day, catching grass-hoppers and other insects on which they feed, and at dusk they retire to the tall trees in Kingwilliamstown to roost. As many as thirty birds may be found roosting together.

A third Bird of Prey seems, from my observations, to be a summer visitor. This is the South African Harrier (*Circus ranivorus*). But it may be that this Harrier is only a local migrant, and that it does not retire very far from our neighbourhood during the winter months. During the summer this bird is one of the most familiar objects of the scenery in the open veld adjoining the mountains. It is generally seen sitting on a termite heap or on the ground, waiting the near approach of a horseman before it moves. Sometimes it sits on a mimosa bush, and lately one of these birds allowed me to ride under the tree on which it

was perched before it moved. From September to the beginning of March is the period of its stay with us, but during the present summer the first birds were seen on August 4th.

Other Migrants.

The South African Harrier (*Circus ranivorus*) has been referred to as a doubtful migrant. Two other birds must be placed in the same category, the South African Hoopoe (*Upupa africana*) and the Paradise Flycatcher (*Tchitrea perspicillata*). My notes on both of these species lead me to conclude that they are certainly migrants in the Pirie district, but continued observation is required to settle the point. The Hoopoe arrives in August, preferring the mimosa country and the sides of the scrub-clad rivers. It was observed this year on August 31st, at Keiskama Hoek, but two years ago it was seen on the Grahamstown road, near Kingwilliamstown, on August 1st. I have no satisfactory dates of its departure. The Paradise Flycatcher, characterized by its long chestnut tail, is found in this district from October to April. During the present season it was first met with at Pirie on October 17th.

II.—The Autumn Migration of 1911.

Swifts.

Both the Black Swift (*Apus barbatus*) and the White-bellied Swift (*Apus melba africanus*) were seen for the last time this season at Kei Road on May 15th; but readers will remember that careful look-out is to be kept for these two species during the current winter, so that their presence or absence in midwinter in Buffalo Basin may be definitely established. All observers are requested to attend to this matter and to record any winter appearances of these birds.

Swallows.

As usual, the Swallows have the greatest interest attaching to them. During the past season the European Swallow

(*Hirundo rustica*) was present in large numbers in this district. On February 7th I counted 276 of these birds on the telegraph-wires near Green River. The birds tarried till April, the last being seen at Pirie on April 11th. Having had occasion however, to visit the Zoutpansberg in the latter part of April, I found the European Swallow still loitering about Pietersburg up to the 27th of that month, and near Groot Spelonken I heard one singing its full song in the air on April 25th.

The White-throated Swallow (*Hirundo albigularis*) was last seen frequenting a rocky part of the Buffalo on February 15th. This is by no means the limit of the bird's stay, and the entry is made here simply to evoke further details from other observers.

I happened to be out of the district at the time when the Larger Stripe-breasted Swallow (*Hirundo cucullata*) normally takes its departure, but I noticed the species still loitering in the Zoutpansberg up to May 10th ; and to my great surprise I met with a small party of these birds at Jafta's, near King-williamstown, on the last day of May. This is one of those erratic movements in migration forming one of the problems still to be solved.

In connection with the Larger Stripe-breasted Swallow a very interesting point came under observation during the past season. A pair of birds built their nest under the zinc roof of an outhouse in Pirie, and had already proceeded far with the incubation of their eggs, when, on February 4th, a terrific hailstorm, with stones larger than turkey eggs, swept over Pirie. The stones battering on the roof dislodged the nest, and revealed to our gaze a round egg larger than those of the Swallow amongst which it had lain. The egg evidently belonged to a parasitic bird, and, when opened, was found to contain a well-formed embryo with Zygodactylous feet. This proved that the egg was the produce either of the Cuckoo or a Honey-Guide. No one had noticed any bird belonging to these groups near the nest, and we could not therefore with certainty identify it ; but we had a strong presumption that it had been deposited by a Lesser Honey-

Guide (*Indicator minor*), and at any rate we received a valuable hint to fix attention more carefully on Swallows' nests in future.

Some details regarding the South African Cliff-Swallow (*Petrochelidon spilodera*) in our district have been gathered since the previous note on migrants was written. Miss Engelhof informs me that the Emgwali colony has occupied its present quarters since the summer of 1896–7, and that it may have been in occupation even earlier. The missionaries at Blythswood fix the date of first occupation there between 1900 and 1902, and Dr. Struthers says they arrived at Nqamakwe in 1902. Information is still wanted regarding the Stutterheim and the Blaney colonies. At the latter place a few birds survived the war of extermination waged against them last year, and attempted to build nests and rear young this year. Two perfect nests were seen at the old spot on April 18th, so that probably two broods at least were reared, but no birds were about on that date. This species was last seen at Emgwali on 25th March; and at Nqamakwe, where the birds reared two broods, on 2nd May.

The Black Saw-wing Swallow (*Psalidoprocne holomelæna*) was noticed at Pirie on the evening of February 19th. Details are greatly desired regarding the distribution and the length of stay in the district of this species.

Storks.

The White Storks (*Ciconia ciconia*) have been as plentiful this year as last, and have roosted about in large numbers about the forests and in the mimosa-scrub. On the evening of 12th January, 185 Storks passed overhead in 15 minutes, in a steady drawn-out stream, making for their roosting-trees, and 30 more were seen further on, roosting in a patch of mimosa. The numbers rapidly thinned out in March, and by the end of that month it looked as if all the Storks had already departed for the North. In the Zoutpansberg, however, stragglers were seen up to May 6th. To my surprise a pair was reported from Tafeni, near Kingwilliamstown,

on May 24th ; next day, five were seen near the Green River ; and most surprising of all, over 80 were counted between Debe and Pirie on June 11th. This latter occurrence indicates another erratic movement which requires explanation. The only explanation that suggests itself is that these birds are not perfectly adult (although they do not show signs of immaturity), and therefore are not yet driven by their over-mastering instinct to seek the land of their birth. For, as is well known, immature birds are not, as a rule, found in the company of the adults at the nesting-haunts. Here is another call to local naturalists to note where and when White Storks (*Ciconia ciconia*) are seen in this region in mid-winter.

Although a number of Storks were killed or disabled by the hailstorm already referred to, no marked bird seems to have been detected as yet in this district.

An immature Black Stork (*Ciconia nigra*) hung about on a vlei on the Amatola Mountains for at least a week in January ; it was seen on the 5th and again on the 13th at the same spot.

Cuckoos.

Owing to the shyness of the Cuckoos and their silence in the summer and autumn, it is exceedingly difficult to discover the dates on which the Cuckoos depart from our district. The Red-chested Cuckoo (*Cuculus solitarius*), or Piet-myn-vrouw, was last heard at Pirie on January 17th. Two months later, however, on 23rd March, an immature male was killed by a boy as it flew across Pirie, and was brought to me. This latter occurrence seems to indicate that the movements of the Red-chested Cuckoo here are similar to those of the European Cuckoo (*Cuculus canorus*). The old birds depart amongst the earliest of our autumn migrants, but the young tarry several weeks behind them and go off alone as autumn is advancing.

The Emerald Cuckoo (*Metallococcyx smaragdineus*) was last heard on January 11. Some small Pirie boys obtained a young one on December 10, and brought it to me under

the impression that they had captured a Kingfisher. Unfortunately they missed the opportunity of noting the foster-parents, a point which still remains in obscurity.

My latest date for the Didric (*Chrysococcyx cupreus*) is December 27th, on which day the bird was calling near Kingwilliamstown.

Birds of Prey.

The Egyptian Kite (*Milvus ægyptius*) remained with us until February 10th. Its numbers were about the same as in previous years; one day, January 5th, I had a fine sight of eleven of these birds in the air at the same time. The South African Harrier (*Circus ranivorus*) tarried with us till February 19th. And the third of our common migrant birds of prey—Naumann's Kestrel (*Cerchneis naumanni*)—haunted the trees in Kingwilliamstown till the latter half of March. Mr. Arthur Weir reports that he saw them then roosting in two gum-trees at the old cemetery.

Other Migrants.

We have in the Willow-Wren an example of a migrant whose arrival in this country generally escapes notice. Owing to its small and unobtrusive colouring, as well as to its silence on arrival in this land, it does not readily attract notice at that season. But in February it begins to tune up, by way of preparation for leaving this land; and during March the Willow-Wren is in full song in South Africa. This year this species turned up as usual in March, beside the Mission-house at Pirie, and sang beside the house till March 29th. After his month's practice at song in this land it is no wonder that he is in perfect song when he reaches the woods of Scotland in April.

Two species of migratory Sandpipers were detected in the Buffalo Basin this year. One of these, the Common Sandpiper (*Tringoides hypoleucos*) of Europe, was haunting the Buffalo in Kingwilliamstown on February 16th. And the other, the Wood Sandpiper (*Totanus glareola*), came under observation three times—one was shot early in the

season by Mr. John Wood, a second was obtained near Pirie by Mr. Pym on February 23rd, and the third was seen by the writer at a piece of temporary water at Tyersha on April 10th.

A specimen of the European Roller (*Coracias garrulus*), known locally as the Blue Jay, was shot at Blythswood by Mr. Moir on December 22nd, and forwarded to me. This species was again met on the Kingwilliamstown commonage by Mr. Arthur Weir on March 19th.

Of birds whose status as migrants has not yet been satisfactorily determined in the district, may be mentioned the Red-backed Shrike (*Lanius collurio*), the South African Hoopoe (*Upupa africana*), and the Paradise Flycatcher (*Tchitrea perspicillata*). Three Red-backed Shrikes were frequenting the mimosa near the Buffalo Bridge at Kingwilliamstown on February 15th; this is the latest date on which I have met with the species locally, but during my visit to Zoutpansberg I saw a female in Pietersburg on April 20th. The South African Hoopoe was last seen at Kingwilliamstown on April 12th.

III.—*Field-Notes on Birds collected at Blaauwberg, N. Transvaal.* By F. O. Noome.

I had for a long time felt attracted by the isolated situation of the Blaauwberg, and felt sure from what I had observed in other parts of the Northern Transvaal Districts that a large number of European migratory as well as interesting S. African resident birds would be found there; but it was not until February last that I was able to undertake the trip. The results fully bore out my expectations and are worth recording.

Leaving Pietersburg by wagonette on February 8th, the first day was spent in travelling over flat, bare, uninteresting veld, until the Hout River was reached, where a halt was made for the night. I found hundreds of White-bellied Storks (*Abdimia abdimi*) and Pied Crows (*Corvus scapulatus*) at this place, roosting in some syringa-trees near an old

homestead. A few hundred yards away was a solitary thorn-tree in which five African Rooks (*Heterocorax capensis*) had taken up their quarters for the night, evidently not caring to mix with the Pied species, for as I startled the latter from the syringa-trees they flew to the thorn-tree and drove away the former, who seemed to be afraid of them. Next day we completed our journey, getting into the ordinary "bushveld" type of country after crossing the Hout River, and stretching continuously right up to the Blaauwberg. A few solitary White Storks (*Ciconia ciconia*) were noticed here and there searching for grasshoppers, but nothing else worth noting was seen.

A fortnight was spent at Blaauwberg, during which I found the intense heat and drought very trying; water was so scarce that there was barely sufficient for cooking purposes, and the mules had to be sent to the Brak River, a distance of about three miles from camp, where a few stagnant pools of water were still to be found. I think that birds had to fly to these pools in the Brak River for water, as the only other places where they could drink were a long way from the place where I found them to be most numerous.

Blaauwberg is a mountain forming part of a series of ranges lying about midway between Pietersburg and the Limpopo River, and about 70 miles N.W. from the former. It rises to a height of 6000 feet or more above the sea-level, bare of vegetation, the top a mass of hard rocks and often hidden in clouds of mist; below the rocks is a plateau covered with dense forest, and leading down from the plateau are numerous kloofs also thickly wooded, while the ridges separating the kloofs and the base of the hill were only sparingly clothed with trees. The kloofs are drained by watercourses, which were dry at the time of my visit on account of the severe drought, and at their bases, where they opened out into the flats below, were long stretches of tall, densely foliaged mimosa-thorn, wild fig, and "marula" trees; the two latter kinds were in fruit, and, no doubt, the reason why I found so many birds in the vicinity. It was amongst these trees that I did the greater part of my collecting.

Sylvia nisoria, recorded from S. Africa for the first time in the 'Annals of the Transvaal Museum,' July 1911, I found warbling and singing in hundreds at all times of the day; but securing specimens was not so easy as one would have expected considering their numbers, as they took refuge in the densest foliaged trees, singing for a time, and sometimes hopping about, but not showing themselves, and I had to wait long and patiently before I could get a shot at them. After a few days' experience of them, I learnt that they were tamest and most easily secured during the early mornings, and I was then able to secure quite a number of specimens. Only one of these proved to be a hen, the rest being either adult or young cocks. I think it is not at all unlikely that these interesting migrants make this place a regular winter resort, as, so far as I am aware, no collectors have visited it before. All the specimens secured were in good winter plumage and fat, and the profusion of insect life attracted by the wild fruit, the wild fruit itself, and the altitude of the region seemed to suit them. I am also curious to know if all individuals migrate to Europe, as I do not think that the climate of Blaauwberg in winter would be too severe for them, and also when they migrate northwards.

I also secured three specimens of the Icterine Warbler (*Hypolais hypolais*) and two Garden-Warblers (*Sylvia simplex*), the only ones I saw; but they may have been more plentiful than appeared to be the case, as they kept very much to the dense foliage, where it was impossible to distinguish one species from another. The song of these three species seemed to me to be very similar. I did not see any *Sylvia sylvia*, a female specimen of which, collected by me at Wonderboom, Pretoria, on April 17th, 1911, was exhibited at the Annual Meeting of the S.A.O.U., 1911, and I do not think that it is found at Blaauwberg. While on the subject of this species I may as well record what I noted of it at the time: I was walking through a lucerne-field and flushed two of them, both taking refuge in a thick quince-hedge. One I badly wounded and it struggled away through the hedge, but not knowing that it was one of these rare

migrants, I did not follow it. Shortly afterwards, farther down the field, I noticed another, which I managed to secure. Finding out then what it was, I returned to where I had last seen the other, but searched in vain. The specimen secured was very fat and in good plumage.

The following migrants were also observed at Blaauwberg :—

Egyptian Kite (*Milvus ægyptius*).
Lesser Kestrel (*Cerchneis naumanni*).
European Bee-eater (*Merops apiaster*).
European Swallow (*Hirundo rustica*).
Red-backed Shrike (*Lanius collurio*).

Strong winds were continuously blowing from the N.E.

Strange to say, not a single Cuckoo or European Roller was noticed.

In some parts of the stretch of mimosa thorn-trees were dense patches of scrub, and amongt other birds found there I collected a series of skins of *Camaroptera griseoviridis sunderalli*. The first two specimens I shot were an adult and immature female, and which I took to be of the subspecies (*C. g. noomei*) described in the 'Annals of the Transvaal Museum,' July 1911. After having dissected them I noticed that the immature specimen had the base of the mandible horn-yellow, while the entire beak of the adult was black. This aroused my curiosity, and I spent several unsuccessful days in trying to procure more specimens, as they kept to the very dense and tangled scrub, in which it was most difficult to get a sight of them, and when I did so, more often than not they were too close. Seeing several herd-boys in charge of goats, the idea struck me of sending them in with their goats to flush the birds, and by doing this I was able to get a few more specimens, some of which were too much knocked about to be preserved. The birds when disturbed by the goats flew into the largest trees, rising higher and higher as their alarm increased, until they reached the topmost branches, where I could see them outlined against the sky. The cackling note, which I also heard them utter when they could not have been alarmed,

sounds something like "ke kehrk," and while uttering it they point their wings downwards at a slant and slightly elevate their tails. They also utter a note like that of a kid, as described of other members of the genus. I was not able to find out whether both sexes have the same call-notes. Two out of the three specimens obtained by driving the scrub with goats were similar to the first two collected on this trip, but the third was quite different, and I must say I was puzzled for some time, as I did not think it possible that two distinct species would be found in the same limited area. On sexing them, however, I found that the two were females, and the third differently coloured one an adult male, and I came to the conclusion that they must all be of the same species.

Mr. Austin Roberts and I have carefully compared the types of *C. g. noomei* collected in the Waterberg District with those from Blaauwberg, a single specimen from Daka, Bechuanaland Protectorate, and another from C. Wilde's collection with no locality indicated, and have come to the conclusion that they are all *C. g. sundevalli*, the juvenile plumage being that described as *C. g. noomei*. The specimen from Daka is an adult, and was correctly labelled as *C. g. sundevalli*. Since my return from Blaauwberg, Mr. Carinus, of the Native Affairs Department at that place, has kindly sent me four more specimens, and the Transvaal Museum collection is now represented by fourteen skins, clearly showing the different phases of plumage. I am still doubtful, however, as to whether they retain the same plumage all the year round, as in one of the females I collected, which is obviously fully adult, the feathers of the throat are moulting from grey to buffish. The youngest specimen in the series is the immature specimen mentioned as one of the first I collected at Blaauwberg ; it is much warmer buffish coloured below, yellowish grey on the upper surface like the Waterberg specimens, and has the lower mandible and gape yellow. In the adults the back and top of head are ashy grey, the throat, breast, and sides slightly paler ashy grey, only the middle of the lower breast and abdomen buffish white, and

the entire beak is black. In those in intermediate plumage, of which the types of *C. g. noomei* are examples, the back and top of head are more or less yellowish grey, the whole of the under surface and sides of face buffish white, palest on the throat and abdomen, and there is always a whitish mark at the base of the lower mandible.

I also collected specimens of the following species of birds :—

Cape Fruit-Pigeon (*Vinago delalandei*).
Chanting Goshawk (*Melierax canorus*).
Yellow-fronted Barbet (*Barbatula extoni*).
Brown-hooded Kingfisher (*Halcyon albiventris*).
Carmine-breasted Bee-eater (*Merops nubicoides*).
Scimitar-billed Hoopoe (*Rhinopomastus cyanomelas*).
Spotted Flycatcher (*Muscicapa grisola*).
Black Cuckoo-Shrike (*Campephaga nigra*).
Three-streaked Bush Shrike (*Pomatorhynchus australis*).
Yellow-fronted Bush Shrike (*Chlorophoneus sulphureopectus similis*).
Crimson-breasted Bush Shrike (*Laniarius atrococcineus*).
Red-backed Shrike (*Lanius collurio*).
Melba Finch (*Pytilia melba*).
Jameson's Waxbill (*Lagonosticta rubricata*).
Tree Pipit (*Anthus trivialis*).
Tit Babbler (*Parisoma subcæruleum*).
Smith's Grass Warbler (*Cisticola chiniana*).
Barred Wren Warbler (*Calamonastes fasciolatus*).
Fleck's Crombec (*Sylvietta flecki*).
Brown-throated Bush Warbler (*Eremomela usticollis*).
White-shouldered Robin-Chat (*Cossypha humeralis*).
White-browed Ground Robin (*Erythropygia leucophrys*).

I left Blaauwberg on February 22nd, and returned to Pietersburg by a different road to that by which I had gone on the forward journey. While driving up a long gentle slope in the bushveld between Blaauwberg and Hout River, my attention was drawn to an enormous number of White Storks (*Ciconia ciconia*) in the air some distance ahead. As I got nearer I could make them out more clearly and found that they were gyrating upwards in the shape of a huge funnel, the base, so far as I could make out, beginning just above the tree tops and widening out to a huge circular ring, which was almost lost to sight in the haze some thousands of

feet above the earth; the funnel-shaped formation must have been composed of tens of thousands of Storks, all circling round and gradually rising higher and higher. As I got nearer I made out several more of these formations, one evidently not being large enough to accommodate them all. After they had remained in the air for some time they gradually floated down to the earth again and settled amongst the scattered trees on the slope, up which I was driving, some distance from the road, and I was able to get a good view of them. When I had driven some distance beyond them they rose again in the same funnel-shaped formations, and were still gyrating when last I saw them through the heavy haze. The haze was due to the intense heat, the time being about midday. I did not see any White-bellied Storks on the way back, and as I was travelling by a different road, do not know whether they had left the place where I had seen them a fortnight before. On my return to Pretoria I paid a special visit to some lucerne-fields at Wonderboom and Onderstepoort, where they were nearly always to be seen during the summer months, as I wished to see whether they had left or not. Not a single specimen was to be seen; but about a week later I noticed three at Elofsdal, which seemed to be immature, their legs being covered with a white chalky substance. The probable reason for this early migration was the dryness of the season and the cold winds which had been blowing during January and February

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IV.—*Description of a New Flycatcher.*

By Austin Roberts.

Tarsiger stellatus transvaalensis, subsp. nov.

Differs from *T. stellatus typica*, of Knysna, Grahamstown, and Port St. Johns, in having the outer margin of the bastard-wing feathers very much paler, almost white, and in being somewhat larger. Types from Woodbush, Transvaal, ex coll. F. Vaughan-Kirby, January 1908. (Leng. 158 & 146 mm.; iris reddish brown, bill black, legs and feet pale dusky yellow.—F. V.-K.) Wing 87 & 82–83 mm.; tail 65 & 58; tarsus 25; culmen 13.

V.—*Notes on a Collection of Birds in the Transvaal Museum from Boror, Portuguese East Africa.*—Part II. By Austin Roberts.

Bucorvus cafer (Scl.). R. 802. Resident.

The Ground Hornbill was met with in all parts of the prazo, but no specimens were preserved. Its loud booming notes were always the first sure signs of dawn, and could then be heard on all sides, often at considerable distances.

Bycanistes cristatus, Rüpp. R. 805. August.

A few pairs were seen at Ngamwe consorting with a large number of *B. buccinator*; they were readily distinguished from that species in flight by their entirely black wings.

Bycanistes buccinator (Temm.). R. 809. (2 F.) Resident.

I. outer ring very pale brown, inner ring mahogany; B. black, base grey; L. grey, the scales black; bare skin of face pinkish, paler below and behind the eyes. Leng. 596–600; W. 259–267; Tl. 191–205; Ts. 32–35; C. 113–125.

This species was observed in all parts of the prazo, sometimes in flocks of a dozen or more, usually feeding on wild figs. In calling to each other their notes are a harsh, nasal, "nhaa, nhaa, ha ha ha"; at other times when feeding or in close company they utter a quiet guttural croak. The mate of one of the specimens secured remained for two or three days in the neighbourhood, mournfully calling for its late companion.

Lophoceros melanoleucus (A. Lcht.). R. 314. (1 M., 1 F.) Resident.

I. outer ring yellowish, inner ring golden yellow; B. dull red; L. black. Leng. 352 & 494; W. 242 & 222; Tl. 230 & 193; Ts. 30 & 29; C. 100 & 83.

The Crowned Hornbill was found in all parts of the prazo, but never in large parties; it was sometimes seen feeding on wild figs in company with the preceding species. A cock

was seen at Buruma continually passing to and fro near my camp, but he was too sly to disclose the whereabouts of his nest, invariably flying off in a circle or far away over the forest out of sight when he found his movements watched.

Lophoceros neumanni, Rchw. R. 817. (1 F.) Resident.

I. hazel; B. creamy yellow, varied in parts with dark brown, the tip and tomia light reddish brown; L. ashy brown. Leng. 470; W. 213; Tl. 194; Ts. 28; C. 70.

This species was fairly common in drier parts of the prazo, and usually found in small scattered parties of five or six, the individuals keeping in touch with each other by uttering a mournful, quavering, whistling note. Their favourite food seemed to be seeds and gum extracted from the pods found hanging to certain trees. A nest was located at Namabieda about 1st October, but on chopping open the entrance I found that eggs had not yet been laid, and the hen made her escape up the hollow trunk. I have noticed that Hornbills of this genus nearly always choose a tree with a hollow trunk extending upwards beyond the entrance, and that when the bird finds herself in danger she immediately scrambles up out of sight: this is no doubt the result of experience, the nests being so often robbed by natives. At Matiwe the attention of one of my native servants was drawn to a clicking sound coming from a crack in a horizontal branch of a tree overhanging my camp, and on climbing up to investigate, he found that it was being made by one of these birds confined in its nest. The old bird had moulted all her long wing- and tail-feathers, cutting an absurd figure, and, with her, two newly hatched young and three much incubated eggs were taken; I tried to keep the first alive, but she disappeared during the first night, either having been carried off by some wild animal or having been stolen from the box, into which I had put her, by the natives, whom I had observed casting longing hungry eyes into the box. The camp had been pitched under the tree for several days before the nest was discovered, and although the male was frequently observed in the neigbouring trees he was never once seen to venture

near the nest, with the usual caution of Hornbills, and no doubt this was the cause of the hen betraying her presence. The eggs, which I was able to preserve, are of very rough texture, dirty grey in colour, the pores showing up white, and measure 39·3–39·9 × 29–29·7.

Halcyon chelicuti (Stanl.). R. 832. (4 M., 4 F.) Resident.

I. dusky ; B. upper mand. dark brown, lower dull red, tip dark brown ; L. anterior brown, posterior orange. Leng. 176–185 ; W. 77–84 ; Tl. 40–44 ; C. 31–35.

Wherever the forest trees were large and free from undergrowth and the grass comparatively short, these interesting little Kingfishers were to be found, and they were very common at Villa Pereira. Individuals would frequently perch on twigs of the branches overhanging the camp at that place, bobbing their heads up and down, darting down to the ground to pick up some insect on the cleared ground below, and occasionally starting a quiet churring note, which might be likened to the whirring of a cuckoo-clock just before it strikes, suddenly breaking off and startling one with a series of wild, hysterical, laughter-like notes. Others in the neighbourhood would often join in, creating an effect delightfully in keeping with the wildness of the surrounding forest. Two nests were found at Villa Pereira about 19th October, one with four newly-hatched young and the other with five much-incubated eggs : both nests were in trees and appeared to be old ones made by Barbets or Woodpeckers. The eggs are of the usual Kingfisher type and measure 24·2–25 × 21·5–22.

Halcyon albiventris orientalis, Ptrs. R. 833 *a*. (1 M., 1 F.) Resident.

I. light brown ; B. dull red, tip dark brown ; L. dull red. Leng. 236 & 223 ; W. 105 & 96 ; Tl. 71 & 61 ; Ts. 13 & 12 ; C. 45.

At Villa Pereira this Kingfisher was frequently noticed perched on the top of peaked ant-hills or dead tops of young

rubber-trees in the clearing, darting down every few minutes to pick up some morsel from the ground and then usually flying to another coign of vantage, from which it would repeat the manœuvre. Elsewhere it was not often met with. Three nests were found in the banks of streams, two during the first week in October, out of one of which three fresh eggs were taken, and the third at Matiwe a month later with three eggs on the point of hatching. The three eggs taken at Buruma measure 25·8 × 23·6–24·5.

Melittophagus meridionalis, Sharpe. R. 861. (1 F.) May–August.

I. dark brown (?); B. & L. black. Leng. 142; W. 78; Tl. 63; C. 27.

Pairs of these Bee-eaters were observed in most clearings, usually perched on bare twigs of fallen trees, from which they darted after passing insects and always returned to the same twig.

Dicrocercus hirundineus (Lcht.). R. 869. (1 F.) July–August.

I. vermilion; B. black; L. ashy brown. Leng. 216: W. 90; Tl. 93; C. 34.

Very few were seen—as far as I can remember, a pair at Ngamwe and two pairs at Buruma; a nest was also found near Matiwe in the bank of a river, from which two young ones darted out when I dug it open and took refuge in the trees, but not having a shot-gun handy I could not secure them. The parents were not seen in the vicinity. Another specimen was procured at Ngamwe, but lost on the journey, which struck me at the time as being different from the others I had seen, but I may have been mistaken. The following particulars were recorded of it:—"No. 255. Ngamwe, 25. 7. 08, M. I. scarlet; B. black; L. slate. Leng. 243; W. 78; C. 30. Perched on twig in shade of large tree and hawking flies."

Upupa africana, Bechst. R. 836. Resident.

The Common African Hoopoe was seen at various times,

but it was always so shy that no specimens were secured. I found a nest at Namabieda on 22nd September by observing a cock enter and leave a natural hole in a tree situated at about 40 feet from the ground, and on examining it found that it contained five fresh eggs on which the hen was sitting and apparently being fed by her mate. These eggs are of a pale greenish-grey colour, rough in texture, and measure 25·9–27·2 × 18–18·5.

Irrisor erythrorhynchus brevirostris, Gun. & Rbts. (1 M., 1 F.) Resident.

These two specimens are types of a new subspecies described in the 'Annals of the Transvaal Museum,' July 1911. Its main characteristics are a short, almost straight, bill, deeper and shorter than in *viridis*, from which it may also be distinguished by having broad white tips to the primary-coverts as in *erythrorhynchus*, the crown and throat not so clearly glossed with blue, the back, scapulars, crop, and breast more bronze-coloured, and the tail with a fiery sheen of bronze on the central feathers and exposed parts of the others.

This red-billed Hoopoe was very common in open forest amongst tall trees, usually in parties of about six, and in habits did not differ materially from the southern races. I found a nest at Matiwe on 30th October in a natural hole in a tree, the entrance to which was so narrow that the bird could only just squeeze through, situated not more than six feet from the ground ; five much-incubated eggs taken from it are of a pale verditer-blue colour and measure 24–26 × 16·8–17.

Rhinopomastes cyanomelas schalowi, Neum. R. 893 *a*. (1 M., 1 juv. M.) Resident.

I. brown; B. & L. black. Leng. 312–320 ; W. 111–113; Tl. 182–185 ; C. 42–45.

The Northern representative of our Scimitar-billed Hoopoe was often observed amongst tall trees, in pairs and sometimes in small parties ; in habits and call-notes it does not differ from the shorter-tailed species.

Caprimulgus pectoralis, Cuv. R. 899. (1 M.) Resident.

No data recorded. W. 165 ; Tl. 130.

I have based the identification of this specimen on two others which are identical with it, one from the Umbelluzi River, P.S.E.A., and the other labelled "S. Africa," from Ivy's collection and probably shot at Grahamstown. The collection in the Transvaal Museum contains a series of adult specimens of this species from Grahamstown and Hector Spruit, and as the three specimens above mentioned agree with them in measurements and in all respects except that they are more rufous-coloured, and the young of other closely allied species are similarly distinguished, I can come to no other conclusion than that they are the young of *pectoralis*. They are much too dark to be mistaken for *fervidus*, of which there are two specimens in the collection from N.W. Rhodesia.

This species was common in the marsh region, but farther in was only found near large streams. If I am not mistaken, it is this species which has a beautiful clear whistling song, which may be described as two clear pipes followed by a series of notes running down the scale. When lying awake at night the song of this bird broke the silence of the forest with such pleasing effect that I often attempted to follow it to its source, but invariably without success ; and it was not until I gave my "boys" instructions to try to show me the bird that some time afterwards, at Ngamwe, one of them was able to locate it and led me to a Nighjar perched on a tree close to the ground ; but as it was then almost dark, I could not see it until it flew away, and of course could not get a shot at it. Almost immediately afterwards I heard it calling again in the direction it had flown, but owing to the darkness I gave up the pursuit.

At Matiwe on the 3rd November I found a solitary egg, partly incubated, and tried subsequently to shoot the bird, but it proved to be too shy and I failed to secure it. It differs considerably from a clutch of *C. fossei* both in size and colour, and is, I think, referable to this species. It is of

a salmon-pink ground-colour, covered with bold blotches of red-brown, and measures 28 × 21·3.

Caprimulgus fossei, [Verr.] Hartl. R. 912. (1 M., 1 F.) Resident.

No data recorded. (M.) W. 150; Tl. 120. (F.) W. 154; Tl. 107.

This species was very common and met with in all parts of the prazo. Its churring notes were most annoying at night, lasting sometimes for ten minutes without cessation and tempting one to stop the racket with a gunshot charge. A clutch of two eggs was taken at Buruma on the 8th October, laid on the bare ground; they are creamy white faintly clouded with brownish purple and red-brown, one specimen with a few blood-coloured spots at the acute end, and measure 26·5 × 20 and 27·5 × 21·6 respectively.

Macrodipteryx vexillarius (J. Gld.). R. 916. August, October, and November.

No specimens were secured, but several males were observed near Matiwe in October and another at Muandama in August, and I found an egg near Guju on 12th November. I made an attempt to get the parent bird in the last instance by leaving the egg and returning later with the ·410 shot-gun, but when once she had been flushed from her egg she would not let me get within range and in the end I had to return and take it without having secured her. This egg is of a general salmon-pink ground-colour, clouded with ashy purple, and measures 32 × 21.

Tachyornis parvus myochrous, Rchw. (?). R. 929.

The Palm Swift was very common near the coast and at Villa Pereira, but difficult to shoot on the wing. At the latter place large numbers were found roosting in the leaves of a very tall indigenous palm, and a discharge amongst the leaves late one evening brought down a quantity of feathers, evidently from nests, and several badly moulting specimens which were not preserved.

Hirundo puella, Temm. R. 961. (2 M., 2 F.) Resident.

I. light brown ; B. & L. black. Leng. 138 (?)–170 ; W. 105–110 ; Tl. 63 (?)–89.

Large numbers were seen during the winter months perched on the bare branches of large trees left standing in clearings. A number of nests in various stages were found under overhanging rocks on the Kane River on 2nd November, one of which contained two fresh white eggs, which measure 20 × 13·2. In this case, and in others in the Transvaal, the nests were all built with the entrance facing inwards towards the supporting wall and not outward towards the observer, as is the case with others of the species which build tubular-mouthed nests.

Hirundo smithi, Leach. R. 959. (2 M., 1 F.) Resident.

I. brown ; B. & L. black. Leng. 154 & 132 ; W. 110 & 105 ; Tl. 78 & 55.

This Swallow is a smaller edition of *H. albigularis*, having the same appearance and resembling it in all its habits. Open mud nests lined with feathers were observed at all the European settlements and at Quelimane, placed under the eaves and sometimes in the rooms of houses ; one nest at Villa Pereira was still in use in May and the young did not leave it until the latter part of that month, and a pair was seen building a nest under the eaves of a native hut at Marunganya on the 23rd September. An addled egg was taken from a nest at Mixixine on 26th April ; it does not differ in colour from that of *albigularis*, but is much smaller, measuring 17·7 × 13·3.

Hirundo monteiri, Hartl. (1 M., 1 F.) Resident.

I. grey-brown ; B. & L. black. Leng. (F.) 203 ; W. 142 & 140 ; Tl. 92 & 88.

Monteiro's Swallow was nowhere very common, but was observed in most parts of the prazo in parties of four or five perched on the tops of very tall dead trees in the forest A number of old nests, which were, I think, constructed by this species, were found in a hollow horizontal branch of a tree standing in the clearing at Villa Pereira.

Bradornis pallidus murinus, Finsch & Hartl. R. 989 *a*. (2 M., 2 F.) Resident.

I. brown ; B. & L. black. Leng. 147–155 ; W. 80–90 ; Tl. 65–69 ; Ts. 17–19 ; C. 13–14.

At Villa Pereira this Flycatcher was fairly common, having been attracted by the clearing operations which were being carried on for the purpose of replacing coffee with rubber-trees, perching on some conspicuous twig in the open and keeping a look-out for insects on the ground below. It was hardly ever seen in other parts of the prazo.

Melænornis ater tropicalis (Cab.). R. 998 *a*. (3 M., 1 F.) Resident.

I. dark brown (F. light brown). Leng. 200 & 195 ; W. 101–103 & 96 ; Tl. 85–91 & 83 ; Ts. 20 ; C. 14–15.

Like the preceding Flycatcher, this species was common at Villa Pereira, but less so elsewhere. It resembles the Drongo Shrikes in its manner of hawking flies, but also frequently darts to the ground to pick up insects. On 9th October I found a nest of feathers and soft material in a crevice near the top of a small decayed tree, about twelve feet from the ground, and in it were three newly hatched young.

Alseonax cærulescens (Hartl.). R. 1015. (2 F.) Resident.

I. grey-brown ; B. max. dark brown, mand. horn colour, tip darker ; L. brownish slate. Leng. 142–144 ; W. 77–78 ; Tl. 60 ; Ts. 16 ; C. 12.

These specimens are somewhat whiter and generally paler than others from Hector Spruit and N.E. Transvaal.

A single specimen was seen and secured at Mpimba, parties of six or seven were frequently observed at Ngamwe, and a nest with three fresh eggs was taken at Buruma on 18th October. The eggs have a cream-coloured ground, covered with minute pale grey and yellowish-brown markings, and measure 18·7–19·6 × 14·1–14·4 ; and the nest was a neat, cup-shaped structure of moss lined with fibres

and fine roots placed in the fork of a small, smooth, white-barked tree at a height of about ten feet from the ground.

Smithornis capensis (A. Sm.). R. 1038. (1 M.) Resident.

I. grey-brown ; B. max. black, mand. white ; L. yellowish green. Leng. 142 ; W. 72 ; Tl. 47 ; Ts. 14 ; C. 15.

Attention was first drawn to the call of this strange Fly-catcher at Mpimba, where this specimen was secured, and it was not uncommon. Subsequently I heard it also at Villa Pereira. It was observed only in certain dark forest where there was little or no undergrowth.

Hyliota flavigastra barbozæ, Hartl. R. 1040 *a*. (1 M.)

(Data lost.) W. 64; Tl. 42 ; Ts. 17 ; C. 11·5.

This specimen was secured by Kirby at Namaserengo.

Batis puella soror, Rchw. R. 1053 *a*. (1 M., 1 F.) Resident.

I. pale lemon-yellow; B. & L. black. Leng. 114 & 106 ; W. 57 & 53 ; Tl. 39 & 37 ; Ts. 16 & 15 ; C. 12·5 & 12.

In the female the eyebrow is rufous and the crown, neck, and upper back tinged with the same colour ; but the bands on the wing are white.

These Batis Flycatchers were often noticed in small parties actively searching the leaves of tall trees in open forest, usually in company with other small birds.

Platysteira peltata, Sund. R. 1057. (1 M., 1 F.) Aug. & Nov.

I. dark mauve, with a white ring forming an inner circlet ; B. black ; L. dark slate ; eye-wattle crimson-scarlet. Leng. (F.) 129 ; W. 65 ; Tl. 53-54 ; C. 17 & 14.

The male was shot by Kirby at Povarello and the female by myself at Ngamwe amongst some thick bush on the bank of the river. I also saw a female feeding two young in some trees in a village midway between Villa Pereira and Rara on 11th November.

Tchitrea perspicillata (Sw.). R. 1085. (1 ad., 1 juv. M.) May–Aug.

I. dark brown (juv. light brown) ; B., L., & eyelids cobalt (juv.: B. dull slate, tip dark brown ; L. dark slate). Leng. 324 & 167 ; W. 79 & 74 ; Tl. 222 & 74 ; C. 16.

The Paradise Flycatcher was often observed amongst tall trees on the banks of streams. The adult male was shot at Ngamwe and the juvenile at Villa Pereira.

Coracina pectoralis (Jard. & Selby). R. 1095. (1 ad., 2 juv. M., 1 F.) Resident.

I. brown ; B. & L. black (juv., L. dark grey-brown). Leng. 247–254 ; W. 141–145 ; Tl. 111–122 ; Ts. 21–22 ; C. 20–21.

These Cuckoo Shrikes are very quiet and consequently often overlooked. They were most commonly found in open forest in dry situations. A pair was noticed near Namabieda guardedly watching the movements of the natives and myself as we passed a patch of small trees ; but though we searched carefully we could not locate their nest, which they seemed to be anxious about.

Prionops talacoma, A. Sm. R. 1107. (1 M., 1 F.) Resident.

I. pale lemon, eyelids darker ; B. black ; L. orange. Leng. (F.) 200 ; W. 103–107 ; Tl. 86–87 ; Ts. 21–22 ; C. 18–19.

Parties of six or more were frequently met with as they restlessly flew from tree to tree, carefully searching every crevice in the bark and the grass at the foot of the trees and uttering a harsh note when alarmed.

Sigmodus retzii tricolor, G. R. Gray. R. 1115 c. (1 M., 1 F., 1 juv. M.) Resident.

I. bright chrome-yellow ; B. basal half crimson-scarlet, apical half orange-chrome ; L. bright orange-chrome ; gape orange ; eye-wattle crimson-scarlet.

	Long.	W.	Tl.	White on outer tail-feather, inner web.	Do., outer web.
M.	218	122	95	30	38
F.	207	116	88	26	26
Juv.	?	115	92	31	46

These specimens are smaller than about a dozen from the Transvaal and also differ slightly in the adults in having narrow white tips to the central pair of tail-feathers and more white on the outermost, and in the black of the head, neck, and throat being duller. The immature specimen is grey, with the primaries, tail-feathers, belly, and under tail-coverts as in the adults, but the secondaries, primary-coverts, and bastard wing tipped with white, the first primary with a white band across the inner web and the central tail-feathers without the white tips. The beak also differs in being dark brown, the apex yellowish and the genys orange.

The habits of this species are very similar to the foregoing and it was equally common. I found a nest at Buruma on 11th October containing five eggs too much incubated to be preserved. The nest was a shallow basin-shaped structure of roots, cleverly bound together and plastered outside with cobwebs so as to exactly match the white bark of the tree in which it was placed. The interior was so small that it is difficult to conceive how the young would have found room in it as they grew up. It was situated on a horizontal branch about twelve feet from the ground, close to a fork, and had I not seen the hen get up from it I should certainly not have noticed anything unusual in the appearance of the branch. The eggs were abstracted by tying the lid of a small tin to the end of a long stick and carefully scooping them out, as the bough was not strong enough to bear my weight. The eggs were of a pale greenish ground-colour blotched and spotted with slate, purple, and various shades of brown, and almost round in shape.

Nilaus nigritemporalis, Rchw. R. 1122. (1 M., 1 F., 1 juv.) Resident.

M.: I. red-brown; B. black, base lower mandible horn;

L. slate-blue. F.: I. brown; B. max. dark brown, mand. horn-blue, tip dark brown; L. ashy slate. Leng. 145 & 137–140; W. 71–80; Tl. 48–53; Ts. 20–21; C. 15–16.

The call of this Shrike was heard more often than the birds observed; it utters one ringing note lasting for some three seconds, and seems to prefer dry, stunted, open forest to the larger trees found in moist situations.

Pomatorhynchus australis congener, Rchw. R. 1126 *b*. (1 M., 1 F.) Resident.

I. purplish brown; B. black, base lower mand. horn-colour; L. pale slate. Leng. 190 & 182; W. 73 & 70; Tl. 81 & 80; Ts. 25; C. 19 & 17.

The Zambesi Red-wing Shrike was common throughout the prazo in open forest, and its great variety of notes frequently led me to follow them thinking that they were uttered by some other bird. They were often flushed from the grass, and then always took refuge in the branches of fallen trees, if these were near, or in some low bush; they were sometimes also seen creeping about amongst climbing plants growing over larger trees.

Pomatorhynchus senegalus (Linn.). R. 1127. (1 M., 1 F.) Resident.

I. dark brown; B. black; L. greenish slate. Leng. 215 & 205; W. 85 & 83; Tl. 95? & 93; Ts. 30 & 28; C. 22 & 21.

These specimens, as well as one from Beira, are distinctly whiter on the under surface and brighter on the upper surface and ear-coverts than about thirty specimens in the Transvaal Museum from the Northern Transvaal to Knysna, and also slightly smaller.

This fine Red-wing Shrike was not so common as the last, and preferred more open country and clearings. It utters a loud, clear series of whistling notes running down the scale as it sails on quivering wing from one bush to another with striking effect. A shallow saucer-shaped nest with two fresh eggs was taken at Matiwe on 1st November; it was composed of reddish-coloured roots very firmly bound with cobwebs to

some stiff twigs hidden amongst some newly sprouted leaves of a slender tree. The eggs are white, with brick-red blotches and streaks, intermingled with purplish slate-coloured markings, and measure 25 × 17·5.

Nicator gularis, Finsch & Hartl. R. 1135. (1 M., 2 F.) June–July.

I. brownish grey; B. dark horn-blue; L. slate-blue; eyelids lemon-yellow; bare skin before eye greenish; gape yellow. Leng. 233 & 201–206; W. 107 & 91–95; Tl. 109 & 88–92; Ts. 30 & 25–26; C. 20 & 18–19.

Kirby obtained one of the females on the Munguzi River, and noted that it was seeking insects in thick scrub and very lively in its movements, frequently jerking its tail about; its stomach contained remains of red ants and elytra of insects. I saw only two specimens, one at Mpimba in dark forest, where it was perched on a twig, often bobbing its head up and down, and when at rest holding its head drawn down between its shoulders, evidently a characteristic attitude judging by the scarcity of feathers on the hind-neck. The second specimen flew from some long grass on the river-bank at Ngamwe and took refuge in a small bush.

Chlorophoneus sulphureopectus similis (A. Sm.). R. 1165 *b*. (1 M.) July.

I. chestnut; B. black; L. slate-blue. Leng. 198; W. 90; Tl. 91; C. 16.

This Shrike was only observed creeping about in the tangled growth of creepers and thorns at Mpimba.

Laniarius major mossambicus, Rchw. R. 1165. (2 M., 2 F.) Resident.

I. dark wine-red; B. black; L. slate. Leng. 223–225 & 215; W. 86–94 & 84–85; Tl. 92–93 & 85–86; Ts. 30; C. 24–25 & 23.

This Shrike was very common at Villa Pereira amongst scrub in old clearings, and on account of its shyness and the nature of the bush it frequents some difficulty was

encountered in getting specimens. Some of its notes resemble those of *Dryoscopus cubla*, while the duets can hardly be distinguished from those of *L. rufiventris*.

Dryoscopus cubla hamatus, Hartl. R. 1178*a*. (1 ad., 2 juv. F.) Resident.

Ad : I. bright orange ; B. horn-blue, brown at tip ; L. slate-colour. Juv. : I. greenish brown ; B. max. dark horn, tomia and mand. paler ; L. slate. Leng. 175 ; W. 77–10 ; Tl. 63–65 ; Ts. 20–21 ; C. 18–19.

Common throughout the prazo. A nest with two fresh eggs was taken at Buruma on 21st October ; it was an open bow-shaped structure of fine roots and grass firmly bound together with cobwebs, and placed in the fork of a branch near the top of a tree. The eggs are white, thickly speckled with slate, red, and red-brown, converging at the thick end so as to form a ring, and measure 21·1 × 16·3 and 21·4 × 16·2 respectively.

Malaconotus olivaceus starki (W. L. Sel.). R. 1187 *b*. (1 M., 1 F., 1 ?)

I. golden yellow ; B. black ; L. slate-grey. Leng. 250–260 ; W. 108–113 ; Tl. 101–108 ; Ts. 33–34 ; C. 28–29.

Not common anywhere and noted only in the marsh region.

I once heard one uttering a loud ringing note during the heat of the day, and on another occasion shot one at dusk while it was creeping about in some thick scrub near the ground and uttering a single soft whistle following two sharp clicks of the beak.

Lanius collurio (Linn.). R. 1213. (1 M.) May.

Only one specimen was seen and secured ; it was perched on the dead top of a rubber-tree in the clearing at Villa Pereira, and I think that it had been delayed in its northward migration by its strength having given out on account of a quantity of wireworms which were found occupying the forehead and base of beak.

Dicrurus afer (A. Licht.). R. 1232. (1 M.) Resident. I. red ; B. & L. black. Leng. 228 ; W. 126 ; Tl. 111 ; Ts. 17 ; C. 20.

This specimen is smaller than those from farther south, as are also the eggs, of which I took a clutch of three at Buruma on 21st October ; the nest from which the eggs were taken was also placed in a different situation, in the top of a tree and not on a projecting branch as is usually the case. The eggs are pure white and measure 23·2–24 × 17·3–17·7. The Drongo was common throughout the prazo and in habits did not differ from those already described by other writers.

Oriolus larvatus rolleti, Salvad. R. 1243*a*. (1 M., 2 F., 1 juv. M.) Resident.

Ad. : I. scarlet ; B. brownish pink ; L. dark slate. Juv. : I. light brown ; B. black ; L. slate. Leng. 218–225 ; W. 132–133 ; Tl. 84–87 ; C. 24·5–25·5.

The Black-headed Oriole was common throughout the prazo, and was invariably to be found in tall trees on the banks of streams or in the marshes.

Oriolus sp. Sept., Nov.

Pairs of a species of Golden Oriole were frequently observed at Namabieda chasing each other backwards and forwards amongst the topmost branches of tall trees, but never leaving a certain limited area, and wildly calling when excited. A specimen was secured (but unfortunately stolen), of which the following particulars were recorded :—No. 304. Namabieda, 22.ix.08, M. I. crimson ; B. pale brown ; L. dark slate-blue. Leng. 219 ; W. 138 ; C. 26.

Buphagus erythrorhynchus (Stanl.). R. 1249.

A few Oxpeckers were seen occasionally, but not while in the vicinity of game.

Cinnyricinclus verreauxi, ([Boc.] Finsch & Hartl.). R. 1259.

The only specimen preserved was subsequently stolen. It

arrived in the prazo during my stay at Namabieda and was thereafter met with in other districts. At Buruma large numbers were in the habit of feeding on berries in the trees overhanging my tent, and did not evince any alarm at the presence of my native servants so long as they did not make a noise, but directly loud talking was indulged in they disappeared like a flash amongst the dense foliage, where they were not very easily seen in spite of their brilliant plumage. At times they would come sweeping past at a terrific pace, suddenly circling and settling in a surprisingly short distance considering the speed at which they were travelling.

Lamprocolius chalybæus chloropterus (Sw.). R. 1266 *b*. (1 M., 1 F., 1 juv.)

I. orange ; B. & L. black. Leng. 205–208 ; W. 113–120 ; Tl. 70–75 ; C. 17–18.

The juvenile specimen, shot at Villa Pereira on 10th May, is just beginning to assume the metallic feathers of the adults.

Large numbers of these Starlings were found in the clearing at Villa Pereira, but elsewhere they were not so common, only a few pairs or solitary individuals being found in the neighbourhood of native villages. Another specimen was also shot at Muandama, but subsequently missed from the collection. They were, as a rule, found perching on the tops of tall dead trees, and appeared to live upon insects.

Anaplectes rubriceps (Sund.). R. 1320. (4 M., 1 F.) Resident.

I. hazel ; B. orange ; L. purplish pink. Leng. 144–154 ; W. 78–81 ; Tl. 49–53 ; C. 16–17.

Males in winter plumage are brighter on the head and crop than females, and the summer plumage is assumed in September, apparently.

Numerous nests were found in all parts of the prazo, but the birds were not always seen in the vicinity. These nests are wonderful structures, made of stiff twigs firmly woven together and fastened to the ends of drooping branches by

means of strips of bark from the same twigs, while the interior, especially the roof, is thickly lined with broad green leaves, and a projecting entrance leads up to the chamber from below ; the nest is abnormally large for the size of the bird compared with that of other Weavers. Two kinds of trees difficult to climb are more favoured than others by these birds, the one having smooth slippery bark and the other a trunk studded with knobbed thorns, and the ends of the branches to which the nests are attached are so brittle that when attempts are made to bend them to get at the nests they invariably break off and the eggs are broken by the jolt or fall. Shells of eggs I saw broken in this way were pale blue, sometimes sparingly spotted.

Ploceus stictifrons (Fschr. Rchw.). R. 1328. (3 M., 1 F.) Resident.

I. Indian red ; B. slate, culmen indigo ; L. pale flesh-pink. Leng. 158–171 ; W. 85–88 ; Tl. 75–60 ; C. 19.

In the marsh region, nests of this species were often seen, but the birds themselves were shy and quiet and seldom met with. In habits and voice it does not differ from the southern species. A number of nests were examined in October and November, but no eggs were found, and the only thing of note I found in them was a tiny chestnut-coloured Bat, which is, I understand, of a new species.

Ploceus ocularius crocatus (Hartl.). R. 1347. (1 M., 1 F., 1 juv.) Resident.

I. orange ; B. black, base lower mand. horn ; L. dark ashy pink. Leng. 154–161 ; W. 72–74 ; Tl. 53–59 ; C. 18–19.

Owing to the shy and quiet habits of this species it was not often noticed, but judging by the number of nests found at different times, it must have been fairly common and widely distributed over the prazo. Those I saw were always silently searching for insects in thick bush, and I only once heard one call softly to its mate. A nest containing three fresh eggs was taken at Namabieda on 28th September ; it

was constructed throughout of compactly woven strips of grass without a vestige of lining, and fixed to the ends of a long trailing thorny creeper overhanging a pool of water. The eggs are of a thin green ground-colour, becoming paler at the acute end, spotted with slate-coloured markings, and measure 22–22·8 × 14·3–14·8.

Two eggs taken from another nest on the 23rd October differ slightly from the others in being green, spotted with purplish and pale brownish slate, and measuring 20·8–21 × 14·9. I did not see the bird in this second case, and cannot therefore be sure of the identity.

Ploceus nigriceps, Lay. R. 1361. (2 F.) Resident.

I. orange; B. black, base lower mand. horn; L. pale flesh-colour, tinged with brown. Leng. 157–159; W. 78–79; Tl. 43–45; Ts. 20–21; C. 19–20.

One of these was shot at Villa Pereira on 25th May and seems to be immature, the beak being lighter-coloured; and the other was shot together with a male at a colony of nests at Buruma on 20th October, and has only partly assumed the summer dress, many white feathers mixing with the pale yellow ones on the breast and flanks. The male is one of those which were subsequently missed from the collection, but I remember that it had also only partly taken on the black feathers of the head and throat, although it was assisting in the nest-building; the following particulars were recorded of it:—No. 319. Buruma, 20. x. 08, M. I. bright orange; B. entirely black; L. dark flesh-colour. Leng. 167; W. 85; C. 21. These measurements agree with those of two adults and one young male from Zimbiti, Beira.

Large colonies of nests were found on all the streams, hanging to the ends of branches, and a quantity of eggs were taken between 20th October and November. Two distinct types of eggs were always found in the same colonies, they being either verditer-blue lightly and sparingly spotted, or pale green thickly covered with minute purplish-slate and brown-coloured speckles, the eggs in the same clutches,

however, always identical, and the measurements of both types being the same, varying from 22·3 × 15 to 24·3 × 15·5.

Ploceus xanthops (Hartl.). R. 1389. (4 M., 4 F.) Resident.

2 ad. MM.: I. orange; B. black; L. flesh-pink. Leng. 180–183; W. 87; Tl. 69; Ts. 25; C. 20–21.

2 juv. M.: I. pale brown; B. brown, genys horn; L. light brown. Leng. 180–183; W. 89–90; Tl. 69–70; Ts. 22–23; C. 19·5.

4 F.: I. straw-yellow; B. dark brown, genys horn; L. light brown. Leng. 173–175; W. 82–85; Tl. 61–67; Ts. 22–23; C. 18·5–19·5.

Adult males do not appear to change their plumage in the winter.

Large flocks of these Weavers were seen during the winter months in gardens and old clearings, busily searching for insects in the trees and grass-seeds in the gardens. A small colony of nests was found on the 18th October near Buruma hanging to the willowy ends of a small tree growing in a pool of water on which lotus lilies were growing, and a clutch of three fresh white eggs was taken from one of them; these eggs measure 21·8–23·5 × 16·1.

Ploceus aureoflavus, A. Smith. R. 1391. (1 ad., 1 juv. M.) July–August.

I. orange (juv. sandy grey); B. black (juv. horn-brown); L. flesh-colour. Leng. 152; W. 77–78; Tl. 48–53; Ts. 20; C. 17.

The juvenile specimen has the lower breast and abdominal region pure white, and the rest of the plumage more or less olive-yellow in proportion to the brightness of the same parts in the adult.

This species was only observed at Ngamwe, where it was not uncommon in the native gardens and reed-beds.

Ploceus xanthopterus (Finsch & Hartl.). R. 1395. (2 M., 1 F.) April.

MM.: I. bright brownish red; B. black; L. flesh-colour. Leng. 145–150; W. 71–73; Tl. 46; Ts. 20–21; C. 17.
F.: W. 64; Tl. 43; Ts. 19; C. 16.

This Weaver was only observed at Mixixine, where it was not uncommon in the neighbourhood of some extensive reed-beds.

Amblyospiza albifrons (Vig.). R. 1400. April–June.

Large flocks were in the habit of roosting in tall cane-grass in a marsh at Villa Pereira, but no specimens were secured.

Quelea sanguinirostris lathami (A. Sm.). R. 1409 *b*. (1 F.) June.

I. light brown; B. pink; L. flesh-colour. Leng. 117; W. 66; Tl. 36; Ts. 16; C. 13·5.

Only one specimen was secured, and I do not remember to have seen any others.

Quelea erythrops (Hartl.). R. 1410. (1 F.) July.

I. grey-brown; B. max. brown, mand. horn; L. light brown. Leng. 123; W. 62; Tl. 36; Ts. 16; C. 14.

A small flock was found searching for grass-seeds in a garden at Ngamwe; I do not remember to have seen it elsewhere.

Pyromelana flammiceps (Sw.). R. 1421. (3 M., 1 F.) Resident.

I. umber; B. black; L. pale brown or flesh-colour. (F.: B. brown, paler on lower mandible.) 2 MM.: Leng. 140–142; W. 76–77; Tl. 43–44; Ts. 20–21; C. 17. 1 M.: Leng. 125; W. 73; Tl. 44; Ts. 20; C. 16. F.: Leng. 125 ?; W. 68; Tl. 32; Ts. 19; C. 16. The last was sexed as a juv. M.

These were all collected within a few days of each other in May and are in full breeding-plumage, but it will be observed that one, of which measurements have been given separately, is somewhat smaller, and in addition it has broad yellow margins to all but the two outer pairs of tail-feathers, and the red of the forehead is not separated from the base of the beak by a fringe of black feathers as is the case with the other two.

Kirby found this Bishop Bird breeding in rank cane-

grass and took a clutch of three partly incubated eggs on 9th May. The nests were similar to those of *P. orix*, as are also the eggs, which measure 14·4–14·5 × 18·7–19.

Euplectes xanthomelas, Rüpp. R. 1428. (2 M.) Resident.

I. dark brown ; B. max. black, mand. white. L. ashy brown. Leng. 142–148 ; W. 67–70 ; Tl. 53–55 ; Ts. 18–19 ; C. 13–14.

These are considerably smaller than specimens from the N. Transvaal and should perhaps be referred to a different subspecies.

These Bishop Birds were not uncommon in native gardens, usually rising when disturbed from the grass to the top of a tree close at hand. A nest with young was found at Villa Pereira on 26th May ; it was of the usual type constructed by this genus and placed amongst some matted weeds and tall grass in an overgrown clearing.

Urobrachya axillaris (A. Sm.). R. 1429.

A few males were noticed flitting over the rank grass in the open stretches between Mixixine and Malinguine.

Spermestes nigriceps, Cass. R. 1451. (1 F.)

I. umber ; B. horn-blue, inclining to cobalt in parts ; L. dark brown. Leng. 100 ; W. 47 ; Tl. 34 ; Ts. 11 ; C. 9·5.

Numbers of nests were to be seen in bushes and trees around homesteads in the marsh region generally and in Quelimane, and during April and May several clutches of from four to six eggs were taken. The nests were large structures of grass, stiff stems converging over and hiding the entrance, and the interior warmly lined with feathers and soft feathery grass-tops. The eggs are white and measure 13·7–15·2 × 10·3–10·6.

Hypargos niveoguttatus (Ptrs.). R. 1455. (2 M.) Resident.

I. light brown ; B. dark cobalt ; L. slate-brown ; eyelids cobalt. Leng. 127 ; W. 56 ; Tl. 51 ; Ts. 15 ; C. 13.

This beautiful little Finch was not uncommon, but owing to its shyness and its habit of frequenting only the dense tangled growth in river-beds it was not often seen and some difficulty was encountered in getting specimens. It was not observed farther inland than Villa Pereira and Muriela.

Ptelia afra, Gm. R. 1464. (1 F.) May.

I. bright red; B. brown above, paler below; L. flesh-pink. Leng. 111; W. 61; Tl. 38; Ts. 14; C. 11.

The only one noted was shot amongst some rank reeds and grass growing round a large ant-heap in the clearing at Villa Pereira.

Estrilda incana, Sund. R. 1508. (1 F.) June.

I. brown; B. dark blue, tip and tomia dark brown; L. black. Leng. 111; W. 46·5; Tl. (incomplete) 39; Ts. 13; C. 9.

This specimen is smaller and paler than another in the collection from Durban (April) labelled as a female, of which the following measurements have been taken :—Leng. 114; W. 51; Tl. 45; Ts. 13; C. 8·5. I am doubtful, however, as to the sexing of this specimen from Natal, otherwise I would consider that from Boror a distinct subspecies; it is lighter red on the rump than that from Natal and cannot therefore be referred to *poliogastra*.

A male and a juvenile specimen were procured at the same time as the female above mentioned, but they were in such bad plumage (the former having lost all its tail-feathers and the latter being only partly fledged) that I did not attempt to skin them. Both adults were shot at the crossing of the Liquari River at Villa Pereira, and a few minutes later noticing that an old Weaver's nest looked as though it had been relined, I put my hand up to it, when three young ones flew out and took refuge in the thick scrub on the bank; and as I had so unfortunately shot both parents I caught one of them and subsequently put it into a bottle of spirits, which was afterwards stolen at Lourenço Marques. I saw another adult specimen for a few days later, but, as it also

appeared to be in bad plumage, I did not shoot it, thinking that I should be able to secure another later on.

Lagonostica brunneiceps rendalli, Hart. R. 1514. (1 M.) Resident.

I. bright red ; B. dark pink, streaks in culmen, tomia and genys brown ; L. white. Leng. 98 ; W. 48·5 ; Tl. 35 ; Ts. 11 ; C. 9·5.

This specimen is rather brighter-coloured than those from Hector Spuit and the crown contrasts sharply with the eyebrows.

A nest of this species was found in May, but as one of the eggs was very much larger than the others and seemed to be that of *Vidua serena*, I left them to hatch ; but on again visiting it, I found that the nest had been pulled to pieces and the eggs destroyed. It was a small oven-shaped affair made of grass lined with feathers, with a wide entrance at the side, and placed in a small tree at a height of about five feet from the ground.

Uræginthus angolensis (L.). R. 1529.

The Blue-breasted Waxbill was fairly common at Villa Pereira, but no specimens were procured.

Hypochera funerea (Tarrag.). R. 1536.

A few males were seen occasionally at Villa Pereira, flying swiftly past over the clearings, but no opportunity offered of securing a specimen.

Vidua serena (Linn.). R. 1539. (1 juv. M.) Resident.

I. light brown ; B. pink ; L. dark brown. Leng. 121 ; W. 66 ; Tl. 43 ; Ts. 14 ; C. 9·5.

A few were sometimes seen in native gardens.

I may as well here remark that since writing on the subject of the breeding-habits of this Widow Bird (*vide* vol. iii. no. 1, p. 9) I have found a fresh egg, of the same dimensions and colour as those previously mentioned, in the nest and with a hard-set egg of *Coliuspasser ardens* ; this was on the 19th March, 1908, in the Dargle District, Natal.

In April, 1911, when in the neighbourhood of Makapan's Caves in the Northern Transvaal, I noticed a young *V. serena* accompanying a flock of *Estrilda astrild*, and pointed it out to the Hon. Paul Methuen, who was with me at the time; but though I followed it for some distance, I eventually lost sight of it and gave up the chase. The plumage was so different from that of the Roodebekkies, and the call so distinct, that there was no mistaking the identity. As further proof of what I have written in this connection, an interesting note by Mr. Frank Bolus, in October, 1909, number of this Journal, seems to indicate that, like the Cuckoo, this species first deposits its egg on the ground and then carries it to the nest of some other bird.

Steganura paradisea (Linn.). R. 1542. (2 M.) Resident.

I. brown; B. black; L. brown. Leng. 301–305; W. 84; Tl. 211–220; Ts. 15–16; C. 10·5–12.

These Widow Birds were more often seen basking in the sun in the mornings than at any other time, usually resorting to the dead tops of trees on the edge of the clearing facing east as soon as the sun had dispersed the morning mists, and a short time afterwards they would rise higher than the trees and disperse in all directions.

Petronia superciliaris bororensis, subsp. nov. R. 1560. (1 M., 1 F.) Resident.

I. brown; B. brown, horn-white below; L. dark slate. Leng. 160 & 157; W. 95 & 89; Tl. 59 & 57; Ts. 17·5 & 16; C. 14 & 13.

These two specimens are very much paler than those from Union territory, especially on the under surface of the body.

The Boror Yellow-throated Sparrow was common at Villa Pereira and the neighbourhood of native villages. Its call is an unmusical grating chirp, which it is fond of uttering while perched on the top of some small tree.

Poliospiza mennelli, E. C. Chubb. R. 1584. (1 M., 2 F.) Resident.

I., B., & L. light brown. Leng. 131–132 ; W. 81 & 78 ; Tl. 52–53 ; Ts. 13 & 11 ; C. 11.

These are the specimens referred in the 'Check List' as *Poliospiza reichardi*, Rchw., but they are obviously not of that species, the under surface being much whiter than indicated in Capt. Shelley's 'Birds of Africa,' vol. iii. pl. 24. fig. 2, and another figure in the "Journal für Ornithologie," 1907, pl. i.

Mennell's Seed-eater was not uncommon at Villa Pereira, where it was often observed on the tops of trees, calling very much like *P. gularis*.

Serinus icterus madaraszi, Rchw. R. 1598 *a*. (2 M.) Resident.

I. hazel ; B. dark brown above, paler below ; L. ashy brown. Leng. 103–105 ; W. 66–67 ; Tl. 39–41 ; Ts. 13 ; C. 9–10.

Large parties were often noticed in native gardens, and they were often seen in cages constructed by the natives, who were in the habit of slinging the cages by means of a running string to the top of a high pole.

Emberiza major (Cab.). R. 1615. (2 M.) Resident.

I. light brown ; B. max. dark brown, base paler, mand. horn-colour, tip dark brown ; L. flesh-colour, tinged with bluish. Leng. 162–170 ; W. 70–80 ; Tl. 68–70 ; Ts. 17–18 ; C. 14.

This Golden-breasted Bunting was not uncommon in open forest, usually flying from the grass when disturbed to the lower branches of the nearest tree, and when approached hiding themselves in the denser foliage higher up.

Emberiza flaviventris, Steph. R. 1616. (1 F.) September.

I. light brown ; B. max. dark brown, mand. horn-colour, tip dark brown : L. dark flesh-colour. Leng. 157 ; W. 78 ; Tl. 65 ; Ts. 16 ; C. 12.

This and the foregoing species were thought to be one and the same and no particular note was made of it. The specimen secured rose from the ground to a tree in the same manner as the others.

Motacilla vidua, Sund. R. 1630. (1 M.) April.

I. umber; B. & L. black. Leng. 210; W. 95; Tl. 96; Ts. 24; C. 16.

This specimen was one of four found frequenting a marshy piece of ground on the edge of a pool of water in the open at Villa Pereira. Others were also observed on open stretches of sand in the river-bed.

Motacilla longicauda, Rüpp. R. 1634. (1.) Resident. (Data lost.) W. 77; Tl. 92; Ts. 20; C. 13.

The Long-tailed Wagtail was not uncommon in parts of the rivers amongst rocks, but very shy and difficult to approach.

Macronyx croseus (Vieill.). R. 1569. (1 M., 1 F.) Resident.

I. grey-brown; B. max. dark brown, mand. horn-blue, tip darker; L. pale brownish yellow. Leng. 203–214; W. 98–101; Tl. 78–79; Ts. 35; C. 15–19.

Not uncommon in open marsh-land. It always took to the tops of the nearest trees when alarmed.

Phyllastrephus flaviventris occidentalis (Sharpe). R. 1758 *b*. (2 M.) Resident.

I. dull red; B. dark brown; L. slate. Leng. 230–233; W. 103; Tl. 104; Ts. 21; C. 21–22.

Not many of these Yellow Bulbuls were seen. Three or four at Mpimba and a pair at Quelimane were found eating small berries, and another pair at Ngamwe seemed to be sucking nectar from some red aloe flowers.

Phyllastrephus capensis suahelicus (Rchw.). R. 1773 *a*. (2 M., 1 F.) Resident.

I. slate-brown; B. dark brown; L. slate-blue. Leng.

203; W. 85–88 & 78; Tl. 85–88 & 76; Ts. 23 & 21; C. 19–20 & 18.

These specimens have been kindly identified by Dr. Reichenow. No measurements are given in his description of the subspecies, but it would seem that it is smaller than the typical *capensis*.

Family parties were found scratching about amongst leaves on the ground in dense bush near Mpimba, and when alarmed set up a cackle and made off further into the scrub, where it was difficult to follow them.

Phyllastrephus cerviniventris, Shell. R. 1770. (1 M., 1 F.?) Resident.

I. pearly grey; B. brown, gape yellow; L. pale flesh-colour. Leng. 194–195; W. 80; Tl. 82; Ts. 20; C. 16.

These specimens were shot in bamboo-jungle at Villa Pereira, and I took them to be the young of the preceding species as the alarm-note and habits were similar, and I was therefore rather surprised to find that they were distinct. One of these specimens has some light brown feathers on the nape, which seems to support this, and both are undoubtedly immature, judging by the appearance of the upper and under tail-coverts; but, on the other hand, the young of *P. capensis* does not vary from the adults to such a great extent both in regard to plumage and the legs and feet, and I do not doubt therefore that *cerviniventris* is a distinct species.

Pycnonotus layardi pallidus, subsp. nov. R. 1795. (2 M.) Resident.

I. brown; B. & L. black. Leng. 197–201; W. 94; Tl. 85–88; Ts. 21; C. 18.

I have given these specimens a subspecific name for the following points:—Generally paler than typical specimens from Rustenburg and the Transvaal, more yellow on the abdomen, a tinge of this colour extending up the centre of the breast, the brown of the crop sharply defined and not extending down the white breast, and the throat lighter brown.

Blackcap Bulbuls were very common where oranges were grown. A nest containing three eggs was found on 22nd October, but as I was on the march, and, as is so often the case when anything is wanted from the loads, the carrier in charge of my collecting outfit was a long way behind, in the end they got broken.

Anthreptes hypodilus, Jard. R. 1833 *a*. (1 ad., 2 juv. MM., 2 ad. FF.) Resident.

I. dark brown ; B. & L. black. Leng. 100–106 & 96 ; W. 50–52 & 48 ; Tl. 30–34 ; C. 14–15 & 13·5.

The Transvaal Museum collection contains specimens of this species from Beira, Hector Spruit, and the Umbelluzi River near Delagoa Bay, and of *collaris* specimens from Durban, Port St. Johns, and Grahamstown Districts.

The Northern Collared Sunbird was very common at Mpimba and Ngamwe, resorting to a flowering *Loranthus* at the former place and *Halleria lucida* at the latter.

Anthreptes longuemarii nyassæ, Neum. R. 1837. (2 ad., 2 juv. MM., 2 FF.) Resident.

I. umber ; B. dark brown ; L. black. Leng. 136, 134, & 122–130 ; W. 80, 72–73, & 64–69 ; Tl. 55, 50–52, & 41–45 ; C. 16–16·5 × 16–17 & 15.

The two FF. have a white mark below the eye. Adult MM. have the ear-coverts grey-brown and juvenile MM. and FF. brownish grey. One of the juvenile males has a trace of metallic blue-green on the rump like *orientalis*, but the others do not show it; both of these immature specimens still retain some of the grey feathers, which are mixed with the new metallic ones. The metallic sheen is distinctly of a different shade to that of *orientalis*, of which the collection contains a single adult male collected by the late J. v. O. Marais, probably in East Africa.

I did not see these Sunbirds at flowers, but always searching for insects in the leaves of trees, often in company with other small birds. They were fairly plentiful at Villa Pereira

amongst broad-leaved trees in open forest, and they were also observed in similar forest farther inland.

Chalcomitra olivacina, Ptrs. R. 1839. (4 M., 4 ?) July–August.

I. umber; B. & L. black. Leng. 124–132; W. 55–66; Tl. 38–45; C. 21–23.

Large numbers of these Sunbirds were found on a flowering *Loranthus* at Mpimba, and a few also observed on flowers of *Halleria lucida* at Ngamwe.

Chalcomitra gutturalis (Linn.). R. 1864. (3 ad., 3 juv. MM., 2 FF.) Resident.

I. dark brown; B. & L. black. Leng. 132–137 & 127–132; W. 69–75 & 68; Tl. 44–51 & 43; C. 14–16 & 13–14.

This species was common wherever certain red aloe flowers were to be found, usually in dry open forest. A pair was noticed at Villa Pereira continually flying to and fro from some of these flowers to a certain part of the forest, in May, and I have no doubt that they had a nest with young.

Cinnyris microrhynchus, Shell. R. 1876 *f.* (1 M., 3 F.) Resident.

I. brown (F. grey-brown); B. & L. black. Leng. 111 & 103; W. 56 & 51; Tl. 38 & 33; C. 17 & 16.

This species was not uncommon throughout the prazo, and was most partial to flowers of the *Loranthus*. A number of nests were found during October and early November, two of which contained eggs; they were attached to the ends of branches of small trees, eight to fifteen feet from the ground, and were made of woolly fibres, feathers, lichen, moss, a few stiff grass-stems, and bits of leaves, and were of the usual shape constructed by Sunbirds. In a clutch of two fresh eggs taken at Buruma on 3rd October the colour is of a uniform slate-grey, and measurements are 17·2 × 11·7 and 17·3 × 11·5, while in another clutch, of the identity of which I am not quite certain, they measure 16·3 × 11 and 16 × 11·4 and are of the same ground-colour as the first but spotted and streaked with black.

Cinnyris shelleyi, Alex. R. 1878. (2 ad., 1 juv. M.) Resident.

I. umber; B. & L. black. Leng. 112–124; W. 61–62; Tl. 39–41; C. 18–20.

The immature specimen has not yet assumed all the metallic feathers of the back and the flanks are partly grey; it was shot on 7th July at Mpimba.

Very few of these Sunbirds were noted; in most cases they were found perched near the tops of trees singing and acting in a lively manner, and only one was seen at flowers in company with *C. olivacina*, *A. collaris*, and *C. microrhynchus*.

Parus pallidiventris revumæ, Shell. R. 1920 *a*. (2 M., 1 F.) Resident.

I. hazel; B. black; L. dark slate-colour. Leng. 146–154 & 145; W. 81–84 & 78; Tl. 64–68 & 60; Ts. 19 & 18; C. 11.

The Revuma Tit was found in small parties or pairs actively creeping about the branches of tall trees in search of insects. A pair was observed prying about old Woodpeckers' nests at Namabieda, no doubt in search of a suitable nesting-site.

Parisoma plumbeum (Hartl.). R. 1929. (1 M.) July–October.

I. light brown; B. black; L. dark slate. Leng. 142; W. 67; Tl. 61; Ts. 17; C. 12·5.

This specimen is paler than those from the Transvaal and adjacent territory.

Only two specimens were seen, one at Ngamwe and the other at Buruma, both in thick bush on the banks of streams. In their manner of spreading their tails and jerking their bodies from side to side they reminded me very much of *Trochocercus cyanomelas*.

Anthoscopus robertsi, Haagner. (2 F.) Resident.

These two specimens are types of the species described by Haagner in the 'Annals of the Transvaal Museum,' August 1909.

Small flocks of these birds were frequently seen clinging to the leaves as they searched for their insect food, and they seemed to be always restlessly moving onwards from tree to tree. They were often seen in company with other small birds bent on the same quest.

Melocichla mentalis orientalis (Sharpe). R. 1951 *a*. (2 M.) Resident.

I. hazel ; B. brown, tomia and mand. horn-blue ; L. slate-blue. Leng. 193–212 ; W. 76 ; Tl. 86–91 ; Ts. 27 ; C. 18–18·5.

These interesting birds were found only amongst tall matted grass in open glades, and seemed only to show themselves when the sun appeared early in the morning or during the intervals between the showers on rainy days. During the dry season I often saw quite a number scattered about on the tops of tall grass-stems just after sunrise as they sunned themselves and loudly warbled to each other ; but no sooner were attempts made to get near them than they would dive into the dense grass and nothing could induce them to rise. At Ngamwe I was once attracted by hearing a wild and musical song proceeding from the depths of a tangled bed of cane-grass, and carefully creeping in I was able to watch one of these birds as it spread its tail, and showed off its fine fluffy plumage and danced about on its perch while it sang away with all its power ; I should never have thought this sluggish-looking bird capable of such exuberance of spirits had I not been an eye-witness, for its general appearance is very much like that of the S. African Grass Birds (*Sphenœacus*), and one gets accustomed to expecting similar moods in birds of like appearance.

Cisticola natalensis (A. Sm.). R. 1967. (1 M., 1 F.) Resident.

(M. data lost.) F. : I. hazel ; B. max. brown, mand. brownish yellow ; L. pale brownish pink. Leng. 130 ; W. 71 & 59 ; Tl. 66 & 49 ; Ts. 27 & 24 ; C. 14·5 & 14.

The Natal Grass-Warbler was not uncommon in the open

grass-land of the marsh region, and its harsh clacking note was particularly noticeable during our journey from Mixixine to Nhamacurra.

Cisticola ruficapilla bororensis, subsp. nov. (1 F.) Resident.

(Data lost.) W. 42 ; Tl. 37 ; Ts. 16 ; C. 10.

This subspecies differs from typical birds from Transvaal, being much smaller and having a distinct subterminal smudge on the tail-feathers ; it is even more closely related *C. dodsoni*, Sharpe, than *C. muelleri* of Alexander is to that species, both in regard to size and the tail-marks.

The habits and voice of this tiny bird did not strike me as being any different from the Transvaal birds, with which I am well acquainted, and particular attention was therefore not devoted to them nor more than this one specimen preserved. I often met with small family parties in the open forest close to my camp at Villa Pereira ; they invariably flew up from the short grass under the trees into the branches of the nearest tree.

Cisticola pusilla, Gun. & Rlts. (1 M.) May.

This specimen was taken as the male type of the species, which was described in the 'Annals of the Transvaal Museum,' July 1911. It is distinguished from *C. rufa* of West Africa by the first primary being more than half the length of the second.

Nothing was noted of this specimen beyond that it was collected at Villa Pereira on 25th May and was moulting.

Cisticola erythrops (Hartl.). R. 2002. (Ad. M. & F. and juv. M. & F.)

I. yellowish grey ; B. max. brown, mand. horn-colour ; L. flesh-colour ; gape yellow. Leng. (juv. M.) 144 & (F.) 122–124 ; W. 55–59 & 48–49 ; Tl. 51–55 & 45–46 ; Ts. 23 & 20 ; C. 14–15 & 13.

The juvenile male is the specimen mentioned in the 'Check List' as *Cisticola sylvia*.

These Grass-Warblers were not uncommon in open forest near Villa Pereira and Mpimba. They were usually found in small parties diligently searching amongst the grass and bushes for insects, and seemed to prefer those parts of the forest in which the trees were tall and free from tangled undergrowth.

Heliolais kirbyi, Haagner. (1 M., 1 ?) Resident.

These two specimens are the types of the species.

The first specimen I shot while perched in an orange-tree in which it had taken refuge on being disturbed from the grass, and the second was one of a small party found searching amongst small bushes and grass in open forest at Mpimba. I saw several more on different occasions at the last place, but did not secure them. Their habits and appearance much resembled those of the Wren-Warblers (*Prinia*); but their red wings served to distinguish them even at a distance.

Calamonastes stierlingi, Rchw. R. 2009. (1 M., 1 F.) Resident.

I. light cinnamon; B. black (in F. tomia and genys whitish); L. flesh-colour. Leng. 132 & 123; W. 61 & 54; Tl. 50 & 40; Ts. 21 & 20; C. 13·5 & 12.

There is a specimen of *stierlingi* from Matoppos, Rhodesia, which does not differ from the two from Boror, and it does therefore occur south of the Zambesi River.

Stierling's Barred Warbler was found in open forest amongst grass and small bushes growing under tall trees. It was, as a rule, seen to rise from the grass into the nearest bush, from which it could watch the movements of the intruder.

Calamocichla leptorhyncha (Rchw.). R. 2013. (1 M.) Resident.

I. light brown; B. max. horn-brown, mand. brownish yellow, apex dusky; L. light slate-grey. Leng. 139; W. 63; Tl. 56; Ts. 25; C. 14; hind claw 8·3.

This specimen is much more rusty yellowish than the described species; but I think it is probably in immature

plumage, as in all other members of this genus, and also in *Lusciniola*, the young are more rust-coloured.

Kirby obtained this specimen at Muriela on 13th June and noted that he found it hopping about near the ground amongst some reeds. I think that this is the same species of which I saw a good many at Villa Pereira amongst the beds of reeds in the river; but they were shy, and the only ones I could have shot were in reeds overhanging ugly-looking pools into which I should not have cared to venture to get them out.

Prinia mystacea, Rüpp. R. 2040. (1 M., 1 F. juv.) Resident.

Ad.: I. yellowish brown; B. black; L. brownish flesh. Leng. 126; W. 48; Tl. 53; Ts. 19; C. 12. Juv. F.: I. dark slate; B. max. brown, mand. yellow, apex brown; L. pale flesh-colour; gape yellow. Leng. 109; W. 44; Tl. 51; Ts. 18·5; C. 11.

The Tawny-flanked Wren-Warbler was common throughout the prazo in suitable localities. At Quelimane I found it amongst weeds under cocoanut-palms, and farther inland usually near open streams.

Apalis neglecta, Alex. R. 2081. (2 M.) Resident.

I. orange-brown; B. black; legs pinkish grey, feet ochreous. Leng. 114–119; W. 49–51; Tl. 45–48; Ts. 18; C. 12–13.

Some doubt still appears to exist in the minds of ornithologists as to the specific distinctness of *A. flavisuga* and *A. neglecta*, and I may here explain that though the literature on the subject is not quite clear, the two species are quite distinct, the males of those found in Natal and the eastern parts of the Cape Province never having the black chest-band which is characteristic of those found from Delagoa Bay northwards. In describing *A. neglecta* a mistake was made in taking a female of *A. flavisuga* as the type female of *neglecta*.

The Eastern Black-breasted Bush-Warbler was found to be fairly common at Quelimane, Mixixine, and Villa Pereira, and was most commonly found in orange-trees. Only the males were noticed to have black chest-bands, and they were always found either in pairs or small parties of four or five actively searching for insects and restlessly moving from tree to tree. The call is a harsh churring note, something like that of the Batis Flycatchers.

Camaroptera brachyura bororensis, Gun. & Rbts. (1 M.) August.

This specimen is the type of the subspecies described in the 'Annals of the Transvaal Museum,' July 1911. It differs from the typical southern race in being much brighter on the back and wings, paler on the flanks, darker on the breast, less yellowish on the crop, and the tarsus is slightly longer.

I only met with this bird in the dense scrub on the banks of the river at Ngamwe. Its habits and voice seemed to be the same as those of the southern race.

Sylvietta whytei (Shell.) (1 M., 1 F.) Resident.

I. brownish yellow; B. max. brown, mand. light horn-brown; L. yellowish flesh-colour. Leng. 95 & 88; W. 55 & 54; Tl. 21; Ts. 17 & 16; C. 12 & 11.

The female specimen has the sides of face, ear-coverts, eyebrow, and entire under surface rufous, and an indistinct collar on the hind-neck pale rufous; it agrees with the description of *S. jacksoni*, but is, I think, the female of *S. whytei*. The male is much paler.

The Nyassa Crombec was first met with at Ngamwe, and it was not often observed until the latter part of October and early November, when quite a number of nests were found, although the birds themselves were not often seen about in their vicinity. Two clutches, of two eggs each, were taken at Matiwe: in one the eggs are speckled with purplish, slate, brown, and red, and measure 17·6 × 11·7 and 16·6 × 11·7; while in the other, of which one of the eggs was subsequently broken in transit, the marks are very much larger, the single

egg now in the collection measuring about the same as the other two, 16·8 × 11·5. The nests were made of white fibres and grass-stems, neatly bound together with cobwebs and ornamented outside with bits of spiders' egg-bags, and suspended to the ends of branches under the shelter of some small tree, usually at a height of about four or five feet from the ground. The nest closely resembles that of the Sunbirds in shape, but instead of the entrance being at the side under a hood, the top is open and only half covers the nest, the sides looping downwards from the twigs to which the nest is suspended and forming a neat rim in front.

Eremomela scotops, Sund. R. 2137 (2 M., 2 F.) April–July.

I. creamy white; eyelids brownish pink; B. black; L. brown, feet brownish pink. Leng. 100–115; W. 55 & 46–48; Tl. 44–48; Ts. 17; C. 10·5–11·5.

These Bush-Warblers were common at Villa Pereira and the marsh region generally. They are very restless birds, constantly moving from tree to tree in search of insects, every now and then setting up a noisy chatter, in which they all join, suddenly stopping to go on with their restless searching.

Crateropus jardinei kirki, Sharpe. R. 2174 *a*. (1 M.) Resident.

I. scarlet; B. black; L. light brown. Leng. 228; W. 99; Tl. 97; Ts. 29; C. 20.

Kirk's Babbler was not uncommon in the scrub growing in old clearings. Its voice and habits do not differ from the larger southern race. I found a nest at Namabieda on 30th September, placed in the tangled branches of a tree which had fallen to the ground; but I was too early for eggs and the birds deserted the nest when they saw me inspect it.

Turdus libonyanus tropicalis, Ptrs. R. 2229 *b*. (4 M., 3 F.) Resident.

I. light brown; B. orange; L. and bare skin of face pale

yellowish. Leng. 223–231 & 214–216; W. 107–113; Tl. 89–96; Ts. 28–32; C. 19–22.

These specimens are all undoubtedly referable to the subspecies described by Peters; but other specimens in the collection from Beira, while agreeing in colour, somewhat exceed the measurements given by Reichenow; specimens from the Eastern Transvaal again are smaller than those from Beira, but in colour come nearest to the Rustenburg specimens.

As can be seen from the number of specimens obtained, this Thrush was fairly common, but, like all its African congeners, very shy when once alarmed. Most of the specimens were secured while they were searching for their food in open, moist ground on the border of the clearing at Villa Pereira or under the large trees where there was little undergrowth. Three nests with eggs were found during the latter part of September and October near Buruma—the first situated on a stump surrounded by sprouting twigs, the second in the fork of a large tree, and the third amongst the leaves of a parasitic plant; all at a height of about twelve feet from the ground. The clutches varied both in shape and colour, some being almost round, others elongated, and the spots were distributed either more profusely at either end or evenly over the whole surface. The two clutches preserved give the following measurements:—30. 9. 08: 24 × 20, 25·6 × 20, and 23·7 × 19·4. 18. 10. 08: 27·1 × 18·8 and 26·3 × 19.

Cossypha heuglini, Hartl. R. 2339.

The wild and varied notes of this species were always much in evidence near tangled patches of scrub and reeds in the river-beds; and though I tried again and again to secure a specimen, I did not succeed in shooting one by following its song, although I frequently came suddenly on it as it was singing, but it invariably saw me just as I was in the act of shooting and darted away in a flash. I shot one specimen quite by chance one evening just before dark, when I could not see what I was firing at, but this specimen, together with

a good many more, was missing from the collection when it was finally unpacked. The following particulars were recorded :—"Ngamwe, 25. 7. 08, M. I. umber, B. black, L. pale brownish slate ; Leng. 198, W. 95, C. 14."

Cichladusa arcuata, Ptrs. R. 2347. (1 F.) 24th June.

I. cream-colour ; B. black ; L. slate-brown. Leng. 197 ; W. 84 ; Tl. 91 ; Ts. 23 ; C. 15.

I only saw this one specimen ; it was actively dancing about and singing a lively song at dusk amongst the leaves of a tall palm-tree growing close to the river at Villa Pereira. This top of the palm was a favourite roosting-place for a number of different kinds of birds, on account of its inaccessibility from the ground, and I have no doubt that this bird was also in the habit of roosting there.

Monticola angolensis nyassæ, Rchw. R. 2236 *a*. (4 M., 1 F.) Resident.

I. grey-brown ; B. black ; L. dark brown (paler in F.). Leng. 183–185 & 170 ; W. 96–101 & 92 ; Tl. 67–73 ; Ts. 23–26 ; C. 20.

These Chats were never seen on or near the ground, but always high up in trees, usually perched on bare twigs at some forty or fifty feet from the ground, in the clearings or open forest. The call reminded me very much of that of *Tarsiger stellatus*. Specimens secured at Namabieda appeared to be breeding, but I did not succeed in finding a nest. I met with them in all parts of the prazo, but they were not common anywhere.

Myrmecocichla shelleyi (Sharpe). R. 2248. (1 F.) Resident.

I. dark brown ; B. & L. black. Leng. 186 ; W. 99 ; Tl. 74 ; Ts. 26 ; C. 16.

I met with this vivacious and interesting Chat only amongst large trees in dry parts of the interior, first in a certain patch of forest some eight miles north of Ngamwe and subsequently near Muandama and Namabieda. At the last place a pair were seen examining logs and holes in trees

close to the ground, evidently on the look-out for a suitable nesting-site, but when I searched for the nest a few days later they took alarm and left the neighbourhood. They are very lively birds, delighting to show off their handsome black-and-white plumage, spreading out their tails, slightly expanding their wings, and dancing about on the larger horizontal branches and sometimes clinging to the trunks of the trees. The males have the crown white and the throat black, while in the females this is reversed, the crown being black and the throat white.

Erythropygia quadrivirgata, Rchw. R. 2352. (1 M.) Resident.

I. dusky ; B. black ; L. pale flesh-colour. Leng. 173 ; W. 76 ; Tl. 76 ; Ts. 23 ; C. 16.

This specimen may have been wrongly sexed, as I find that three males from Beira are larger, measuring : W. 81–85, Tl. 78–80, Ts. 25–27, C. 16–17.

I found this species only in the drier parts of the prazo. Near Matiwe, on 1st November, I found a nest with two fresh eggs, which got broken through my not having anything to carry them in ; it was a cup-shaped structure of grass lined with fine roots and placed in a small bush, about two feet from the ground, and hidden by some fresh green shoots and young leaves.

Erythropygia zambesiana, Sharpe. R. 2361. (3 M.) Resident.

I. brown ; B. max. dark brown, mand. horn-colour, apex dark brown ; L. pale flesh-pink. Leng. 148–154 ; W. 65 ; Tl. 63–65 ; Ts. 22 ; C. 15.

In almost every patch of scrub in the open forest, particularly in the neighbourhood of Villa Pereira and Mpimba, these noisy birds were to be found, their loud scolding notes often lasting until dark, starting again at dawn and continuing at intervals throughout the day.

VI.—*Correspondence.*

The Editors, Journal of the S. A. O. U., Pretoria.

Dear Sirs,—In registering the specimens in the Transvaal Museum collected by Mr. Noome at Blaauwberg, on which an article appears in the present issue of the Journal, I have found that those recorded as *Sylvia nisoria* have been wrongly identified, as also another specimen recorded in the 'Annals of the Transvaal Museum' last year. I am advising you at once in order to prevent further misconception, and I hope you will be able to insert this in the next issue of the Journal.

The mistake arose in the following way:—The specimen from Venterskroon was not sexed, and as it often happens that young birds are difficult to make out on dissection, and marked with a query, as in this case, I thought it not unlikely that this was a young bird. I did not, however, come to this conclusion until after I had failed to locate the specimen in Reichenow's 'Die Vögel Afrikas.' In that work the wing-measurements of *Hypolais olivetorum* are given as 80–86 and *Sylvia nisoria* as 85–90; and as the specimen before me exceeded even those of the latter, being 93 mm., I concluded that it could not be the former and was more likely to be a young bird of the latter; but being in doubt I sent the specimen to Dr. Reichenow for confirmation of the identity, with the result already recorded. At that time the genus *Hypolais* was not represented in the Museum collection, hence my difficulty; but recently Mr. Noome has collected three specimens of *Hypolais hypolais* in the Transvaal (two at Blaauwberg and one in Pretoria District), and two specimens of *Sylvia nisoria* from Roumania have been acquired by the Museum by exchange, so that I am fully convinced these specimens from Venterskroon and Blaauwberg can only be referred to *Hypolais olivetorum*, and not to

Sylvia nisoria. They are somewhat larger than those previously recorded, measuring as follows :—

Locality.	Date.	Sex.	Wing.	1st Prim.	Tl.	Tars.	Culm.
Venterskroon, Potchefstroom	18. 2. 12	? (M)	93	11	69	?	16
Blaauwberg	10. 2. 12	M	89	11	70	22	16
„	11. 2. 12	M	85?	8	69	22	16
„	13. 2. 12	M	93	11	68	22	16
„	15. 2. 12	M	90	10	68	22	16
„	„	F	87	11	68	23	16
„	16. 2. 12	M	83?	11	68	22	16
„	„	M	89?	10	71	22	16·5
„	„	M	90	11	72	22	16·5
„	19. 2. 12	M	91	12	67	22	16
„	March 1912	M	89	10	67	22	17

In some of the specimens the wing-feathers are moulting, and these are indicated by queries. It will be noted that the first primary is rudimentary, and there can be no doubt that this species is a migrant, especially as Mr. Noome writes that their habits were sedentary at Blaauwberg.

Trusting that this will reach you in time for insertion in the next number of the Journal,

I remain, yours truly,

AUSTIN ROBERTS.

Transvaal Museum, Pretoria,
30. 4. 12.

Quail in South Africa.

DEAR MR. HAAGNER,—

Can you confirm the view expressed on page 222, vol. iv. of Sclater's 'Birds,' that though some European Quail may reach our area and actually interbreed with the red-cheeked species which swarms through South Africa year after year, yet there is at least a subspecies distinction between the two?

If *Coturnix africana* does not occur in Europe, then where is it a migrant from?

Yours truly,

JNO. WOOD.

East London,
6. 6. 11.

VII.—*Account of the Eighth Annual General Meeting.*

The Eighth Annual General Meeting of the S. A. O. U. was held in the Board Room of the Transvaal Museum on 25th November, 1911, at 3.45 P.M.

Dr. J. W. B. Gunning, President, in the Chair. There were also present: Ivan Ayres, M. L. Gunning, B. C. R. Langford, F. O. Noome, Austin Roberts, and Dr. Theiler, of Pretoria; J. P. Murray, of Basutoland; E. M. Skea, of Johannesburg; F. E. O. Mörs, of Brits; and the Hon. Secretary.

The President welcomed the Members present, and gave a short *résumé* of the work done in S. A. Ornithology during the past year. He also touched upon the losses sustained by the Union through deaths, and asked those present to rise from their seats as a mark of respect to the departed Members: Messrs. E. H. U. Draper, of Johannesburg; Dr. J. B. Greathead, of Norvals Pont; Alfred Millar, of Durban; and Captain G. E. Shelley, of London.

After the minutes of the Seventh Annual General Meeting, held in Cape Town, were read and confirmed, the subject of Wall-pictures of some important S. A. Birds for S. A. Schools was discussed, and the Chairman explained the cause of the delay in the matter.

The Chairman also announced that on the subject of the Protection of Birds we had got a step further, inasmuch that a circular had been issued to all Municipalities in the Transvaal, requesting that a bye-law be added preserving birds from indiscriminate capture and slaughter by the schoolboy and others.

The matter of a new Committee for Migration was left in the hands of the Council. The Secretary's and Treasurer's reports were duly read and passed. These will be found printed at the end of this account.

In connection with the report, Dr. Gunning stated that all Korhaan and Paauw had been declared Royal Game for the next five years, also that it had been reported that the crops of these birds contained 90 per cent. of insects.

Dr. THEILER regretted the falling off in Membership, and suggested that school teachers should be circularised. Mr. HAAGNER proposed that an Associate Membership be created for them at a subscription of half a guinea and that this be added to Rules 3 and 15. This was unanimously adopted.

The following office-bearers were elected :—

President..... Dr. J. W. B. GUNNING.

Vice-Presidents .... 1. Dr. J. E. DUERDEN, Cape Province.
2. Mr. E. C. CHUBB, Natal.
3. C. McG. JOHNSTON, Free State.
4. C. SWYNNERTON, Rhodesia.

Editorial Com. .... Mr. LANGFORD, who retired by virtue of Rule 10, was unanimously re-elected.

Secretary and Treasurer Mr. A. K. HAAGNER was once more re-elected to the dual office, and the Chairman requested Mr. Haagner to retain office for another year.

Members of Council.

Cape Province	FRANK A. O. PYM, Kingwilliamstown.
Transvaal	AUSTIN ROBERTS, Pretoria.
Free State	ROLAND CHAMBERS, Lindley.
Natal	Dr. J. E. BRISCOE, Charlestown.
Basutoland.....	J. P. MURRAY, Maseru.
Rhodesia	JAMES L. HEWARD, Selukwe.
Portuguese S.E. Africa	P. A. SHEPPARD, Beira.

New Members. — The following new Members were elected :—C. E. GYDE, M. L. GUNNING, while Mr. IVAN AYRES was re-elected.

A vote of thanks to the Chairman concluded a successful and interesting meeting.

Mr. AUSTIN ROBERTS exhibited a number of new species of S. A. Birds and an interesting collection of birds' eggs, collected by him recently in the Bushveld, and Mr. MÖRS a packet of pieces of broken china and glass ejected by a Vulture.

Secretary's Report.

Gentlemen,—

The last Annual Meeting was held in Cape Town during the Pageant week, and although many Members of the Union were in Town at the time, few took the trouble to attend the Meeting, and it would, therefore, not seem advisable to arrange meetings to coincide with such affairs for the future.

For this reason we are holding the Meeting at the Head-quarters of the Society this year, and if the S. A. A. A. S. holds its annual congress at a suitable centre next year, a Meeting in conjunction with them again might be considered.

Members.—I regret to state that the past year has been far from prosperous or successful, as will be seen from this Report. We have lost three good Members by death: E. H. U. Draper, of the Govt. Labs., Johannesburg; A. D. Millar, of Durban (a Vice-President of our Union); and Dr. Greathead, of Grahamstown. The former was, in spite of ill-health, a valuable working Member. You know the record of Alfred Millar, while Dr. Greathead's name is known to some of you as a genial gentleman and keen sportsman-naturalist. The details of these gentlemen's deaths have been notified to you in the Journal. Besides these losses, three of our Members have resigned and two of our hard-working Members—the brothers Taylor—have left South Africa, so that we can look to them in vain for a continuation of their interesting papers. Our loss is another's gain, and we hope that Mr. Lionel Taylor will do as good work in British Columbia as he has done here—he carries with him the good wishes of the S. A. O. U.

The following new Members are nominated for election:—M. L. Gunning, proposer Dr. J. W. B. Gunning, seconder A. Haagner; C. E. Gyde, proposer B. C. R. Langford, seconder A. Haagner; Ivan Ayres, to be re-elected (election postdated 1911).

The Membership at date, after deducting deaths, resignation, and defaulters, numbers 93 Ordinary and 8 Honorary—a falling off of over 20 on the figures of two years ago.

Publications.—Two numbers of the Journal were issued during 1910, forming Vol. VI., with 81 pp. letterpress, one photographic and one coloured lithographic plate of eggs.

Migration.—The Third Report, consisting for the most part of observations made during 1909 and 1910, is now in the press, being included in No. 2, Vol. VII. In order to get this work pushed a bit during the coming year, I would beg that a new Committee for the purpose be elected, as my official duties are now too heavy to warrant my continuing the work alone and unaided. Several Members of the old Committee are now absent from Pretoria.

Obituary.—Besides the Members of the Union previously mentioned, we have also to record the death of Capt. G. E. Shelley, the author of the unfinished but somewhat exhaustive 'Birds of Africa.'

Office-Bearers.—Mr. Langford, on the completion of his term of office on the Ed. Com., retires by virtue of Rule 10, thus creating a vacancy on the Ed. Com. He is, however, eligible for re-election. Owing to the transference of Mr. E. C. Chubb to the Durban Museum it will be necessary to elect a new Member of Committee for Rhodesia, and, owing to Mr. Taylor's departure for Canada, a new Member for Transvaal.

Agents.—The stock of back numbers and the business was transferred from R. H. Porter to Messrs. Witherby & Co. at the beginning of this year.

A. K. Haagner,
Hon. Sec.

Tvl. Zoological Gardens, Pretoria,
June 1, 1911.

SOUTH AFRICAN ORNITHOLOGISTS' UNION.

Statement of Receipts and Expenditure 1910.

1910.		£	*s.*	*d.*		£	*s.*	*d.*
Jan. 1.	To Balance	58	5	5				
Dec. 31.	Subscriptions	76	13	0				
	Sales of Journal	10	12	9				
	By Printing and Publishing Journal	....				76	1	0
	Postage and Stationery	....				2	5	10
	Commission and Bank Charges	....				1	0	4
	Sundries and Indexes	....				11	0	0
	Cover Account	....				0	13	0
	R. H. Porter	....				3	0	0
	By Balance in hand	....				51	11	0
		£145	11	2		£145	11	2

A. K. HAAGNER,
Hon. Treasurer.

Books and Accounts examined and found correct.
AUSTIN ROBERTS.

VIII.—*Occasional Notes.*

1. NESTING OF S. AFRICAN BITTERN (*Botaurus stellaris capensis*).—On the 12th inst. while out Duck-shooting on some pans near this place, I found two nests of this species; they were within 20 yards of each other, in a shallow grassy pan, situated in clumps of grass raised about a foot out of the water, which was only a few inches deep. The nests were rather flat structures, composed of dry grass, about a foot in diameter: one contained three eggs and a young bird, which had probably hatched out that morning; the latter was covered with long down of a vinous brown colour, the legs and feet pale pink, and the bill, which still had the egg-tooth adhering, was pinkish yellow, the eyes dark brown. Although so young and very weak this little fellow was very

fierce, and opened its beak and tried to attack me; all the other eggs were very hard-set and one was already chipped. In colour the eggs were olive-brown, exactly like those of the European Bittern (*B. stellaris*). The second nest contained four eggs, which were also on the point of hatching, so that four appears to be the full clutch. A nest found last year, containing three fresh eggs (now in the Transvaal Museum), was situated in a large pan, in a clump of rushes standing in about three feet of water; but was otherwise similar to those described above. Close to the two Bitterns' nests I found a Marsh Harrier's (*Circus ranivorus*) nest containing two eggs. C. G. Davies, Sgt. C.M.R.

Matatiele, East Griqualand,
22. 11. 11.

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2. Great Locust Bird (*Ciconia alba*).—On the 20th April last I saw a single White Stork on the Bailey Estate, near Colesberg, and at Berlin—nearly 30 miles up the line from here—there has been a solitary bird stalking about for quite a month during May and June 1911. It has been noticed to fly when run at by a dog, but has not actually left the neighbourhood of that village these last four weeks.

Jno. Wood.

East London.

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3. An Albino Sparrow in Basutoland.—I send you herewith a female bird which I take to be an albino variety of the Common Cape Sparrow (*Passer melanurus*). This bird has reared a brood of three young ones, and was mated to an ordinary cock Cape Sparrow. She was accidentally killed. The young ones are normal birds. The albino in question is of a dirty white, with very pale brown markings.

J. P. Murray.

Maseru,
15. 4. 12.

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4. During last month sportsmen friends of mine, who can be relied upon, told me they saw Quail in fair numbers at Aliwal North, that six were shot in the Stutterheim district, and a good few at the Chalumna River mouth near here—all during last month.

Melanism seems of such frequent occurrence amongst the Quail down this way that it is becoming the practice to speak of the "black" as distinct from the common species.

The large Locust Bird seems to have left a good detachment behind this season. Over and above a few specimens here and there throughout Kaffraria last month, no less than 80 were reported from Debe Nek a few weeks ago. The Common Curlew is also on our tidal rivers just now—but only a few.

The Speckled, or Rock, Pigeon has invaded our coast bush in its tens of thousands this season: said to be due to severe cold in our near back country and also owing to abundance of berries consequent upon late rains. Jno. Wood.

East London,
4. 7. 11.

IX.—*Short Notices of Ornithological Publications.*

1. *The Ibis*, July 1911, October 1911, and January 1912.

The July number contains Part 2 of Mr. W. L. Sclater's account of the birds collected by Mr. Claude Grant during his "Rudd" Zoological Survey of South Africa.

A new species of Stonechat is described under the name of *Pratincola torquata orientalis*, from the Eastern Cape Colony, Transvaal, &c., also a new race of *Cossypha caffra*, called *namaquensis*, from Klipfontein in Namaqualand. This bird was given the local name of "Geelgat." I have never in all my journeyings in South Africa—north, south, east, or west—heard this inappropriate name applied to the Robin Chat. It is a common Boer name for the Black-capped Bulbul (*Pycnonotus layardi*).

Mr. G. L. Bates gives us a long account on the Birds of

Southern Cameroon, illustrated by a well-coloured plate of *Lobotus oriolinus*, and another of eggs of West African birds.

From the account of the Annual General Meeting we see that the British Ornithologists' Union now numbers 419 Ordinary, 3 Extraordinary, 9 Honorary, 4 Lady Honorary, 10 Colonial, and 19 Foreign Members. Mr. J. Lewis Bonhote, M.A., was elected Secretary.

In the October 1911 number Mr. Bates continues his paper on the Birds of Southern Cameroon, illustrated by two more lovely plates of eggs. Then we have also a further contribution to the Ornithology of Cyprus by our one-time Editor and President, Mr. John A. Bucknill, M.A.

Mr. W. L. Sclater (another ex-President of our Union) continues his account of Claude Grant's collections in South Africa. *Merops superciliosus* is recorded from Masambeti and Beira, forming an addition to the South African List.

The January number contains the 4th and last part of Mr. Sclater's articles on Claude Grant's collection. Herein *Vinago wakefieldi* is recorded from Tambarara and Tete in Portuguese East Africa, while Mr. Sclater upholds Dr. Reichenow's separation of the Green- and Blue-metallic-spotted Doves.

2. *Die Vogelfauna des Mittelafrikanischen Seengebietes.* By Prof. Dr. Anton Reichenow.

This is an account of a collection of birds made in the Lake Regions of Central Africa by His Highness the Duke Adolf Friedrich of Mecklenburg. A bibliography of works and papers that have appeared on the territory since 1905 is given, as also a sketch-map of the region under view.

Many new forms are described, five of which are illustrated in two coloured plates.

3. *A List of British Birds showing at a glance the Exact Status of each Species.* Revised to August 1910 by W. R. Ogilvie Grant.

This is a handy little publication sold by Witherby & Co.

at 1*s.* 6*d.* net, and may be used either for reference or for labelling specimens.

4. *Revista Italiana di Ornithologia.*

We have received a specimen copy of the first number of this new (Italian) Journal of Ornithology, which promises to be an interesting publication. This number contains several papers—none of much interest to South African Ornithologists,—short notes, reviews, &c., and a coloured plate of a hybrid Pheasant.

5. *The Aquila: Report of the Royal Hung. Bur. of Ornithology.* Vol. xviii., 1911.

This number contains, amongst other articles, the 17th Annual Report of the Royal Hung. Bur. of Ornithology for 1910. Also an enquiry into the stomachs and pellets of Owls by H. E. Greschik. One instance in this latter seems worth recording for the benefit of sceptics. The pellets of the Forest Eared Owl (*Asio otis*) showed the following result: harmful animals 97 per cent., useful 2·5 per cent., of no account 0·5 per cent. The Barn Owl is less praiseworthy—the percentage of harmful to useful animals being 67·6 per cent. to 32 per cent.

The Report on the marking of birds in 1911, by Jakab Schenk, is of especial interest. 649 White Storks and 412 Chimney Swallows were marked during the year.

6. *The Home-Life of the Osprey.* Photographed and Described by Clinton J. Abbott, Assoc.A.O.U. Witherby & Co., London.

This is the 3rd of the series of "Bird-lovers' Home-life," and, like its predecessors, is remarkable for the beautifully clear and interesting photographic plates. These depict the bird in many phases of its life-history. The book is sold at 6*s.* net. for cloth-bound copies, and 10*s.* 6*d.* half-bound leather, and can be recommended to any bird-lover or ornithologist.

7. *The Game Birds of South Africa.* By Major Boyd Horsbrugh, A.S.C. Illustrated with Coloured Plates by Sergt. C. G. Davies, C.M.R. Witherby & Co., London. Price 21*s.* per Part.

Part I. of the above work has reached us. The coloured plates (16 in number) are from the admirable drawings of Sergt. Davies, C.M.R., whose work is now well-known to Members of the Union. We have been favoured with a sight of the original drawings and only wish it were possible to reproduce them in all their beauty. Messrs. Witherby's plates, however, are very good and no difficulty should be experienced in identifying species at a glance.

The backgrounds, it is believed, are not by the same artist, and we must be allowed to say that in some instances (notably that of the Dikkop) they might have been so handled as to give a truer idea of the haunts of the species depicted. We are, of course, well aware of the difficulty of exhibiting birds —especially game birds—in their natural surroundings and at the same time bringing out the colours with the boldness required in a work of this nature.

A book like this is necessarily somewhat expensive and purchasers naturally like to feel that the letterpress is as complete as may be. In this regard we must confess to a feeling of disappointment at the brevity of some of the descriptive matter.

We do not understand why *Otis rüppelli* has been omitted. It should have been included even without a plate.

This much being said, we have nothing but praise for a book which should be in the hands of every South African sportsman and lover of birds.

We look forward with pleasurable anticipation to the ensuing parts.

Part I. contains plates and letterpress of the following species:—*Otis kori*, *O. ludwigi*, *O. caffra*, *O. cærulescens*, *O. barrovii*, *O. vigorsi*, *O. melanogaster*, *O. rufierista*, *O. afroides*, and *O. afra*; the two Dikkops (*Œdicnemus capensis*

and *Œ. vermiculatus*), the two Snipe (*Gallinago media* and *G. nigripennis*), the Painted Snipe, and the Coqui Francolin.

8. Messrs. Witherby & Co. are shortly publishing 'A Hand-list of British Birds,' giving a detailed account of the distribution of each bird in the British Isles, and a general account of its range abroad, together with details of the occurrences of rarities. The hand-list is the joint work of Messrs. E. Hartert, F. C. R. Jourdain, N. F. Ticehurst, and H. F. Witherby.

THE JOURNAL

OF THE

SOUTH AFRICAN ORNITHOLOGISTS' UNION.

Vol. VIII. DECEMBER 1912. No. 2.

X.—*Random Notes on South African Ornithology.*

By C. G. Davies, M.B.O.U.

I have written the following random notes on various ornithological matters in the hope that they may be of some interest.

In the volume of 'The Ibis' for 1911, and the first part for January 1912, Mr. W. L. Sclater has given a most interesting account of the large collections of birds made by Mr. Claude Grant in various parts of South Africa. These articles should be studied by ornithologists in this country as several new species and subspecies are described. I have, unfortunately, only got the last part by me now, but should like to make a few comments on one or two of the species mentioned in that part.

Cerchneis naumanni. Lesser Kestrel.

Mr. Sclater notes that two immature males are assuming the blue head by a feather change and by abrasion of the edges of the feathers, not by a moult. I have shot numbers of these birds in all stages of change, and without exception they were all getting the blue head by a *moult*, not by a change in the colour of the feathers—the new blue feathers being sprinkled about amongst the old feathers, which were very much faded and worn. I might mention, however,

that a specimen lent me by the authorities of the Transvaal Museum had already got the blue head, with the exception of a strong rufous wash on the crown of the head. Last year I shot a very curious example which had just completed its moult, and differed from the usual form of adult male in having the blue head strongly streaked with black, as in *C. rupicola*, the breast, underparts, and under wing-coverts strongly spotted with dark brown, and in having a few slate-grey spots on the scapulars ; it also had rather more grey on the wing-coverts than the average adult male. Another remarkable specimen is a very fine adult male in the Transvaal Museum, shot in the Pretoria district. It differs from typical specimens in having the whole of the breast and underparts quite uniform, without spots, in this respect resembling *C. pekinensis* of Eastern Asia ; it is also a very large bird with a wing-measurement of 10 inches as against 9 inches in average males.

Circaëtus cinereus. Brown Harrier-Eagle.

Mr. Sclater separates this species, which has hitherto been considered the young bird of the black-breasted, white-bellied bird usually known under the above name, but originally described by Sir A. Smith as *C. pectoralis,* and gives the following reasons for this decision, viz. :—

(1) Although in other respects the two birds do not differ in size, the bill in *C. pectoralis* is constantly and markedly smaller than in *C. cinereus.*

(2) That there seems to be no intermediate form between the two.

(3) That Mr. C. Grant has found the brown birds (*C. cinereus*) breeding in this plumage.

Through the kindness of the authorities of the Transvaal Museum I have good specimens of both these birds before me, and the differences, especially in the size of the bill, are very striking, even without measuring.

I would, however, remark that Mr. Sclater is not the first naturalist to uphold the distinctness of these two birds. Long

ago such well-known ornithologists as Rüppell, Schlegel, and Von Heuglin gave their reasons for believing the two birds to be distinct, and also pointed out another character—*i. e.*, that in *C. cinereus* the tarsus and foot were longer than in *C. pectoralis*. Another point is that, to the best of my knowledge, *C. pectoralis* has never been recorded from north of the Equator, whereas *C. cinereus* has been recorded from far to the north.

There appears to be no description of the young of either species in any of the text-books on S. African birds. The young of *C. cinereus* appears to be still undescribed—that is, unless they are exactly like the adult ; but good descriptions of the young and immature birds of *C. pectoralis* will be found in 'The Ibis' for 1878, where Mr. J. H. Gurney, in the course of a series of articles on vol. i. of the 'British Museum Catalogue of Birds,' discusses the various species of the genus *Circaëtus*. Mr. Gurney thus shortly describes the quite young bird :—"Above brown, with fulvous edging to the feathers, broadest on the interscapular feathers, narrowest on the wing-coverts. The under surface (except the throat) is decidedly rufous and whole coloured, except the tibial and abdominal feathers, where the feathers have white bases, and most of them are also tipped with white. Tail dark brown, crossed with five somewhat indistinct bars of darker brown, the last bar subterminal, and followed by a narrow whitish tip."

From this plumage the bird appears to get gradually whiter below, the flanks crossed with dark brown bars, which are gradually lost as the bird approaches maturity, at the same time the upper breast becomes gradually darker until it reaches the final black stage.

In one of the later numbers of the 'Annals of the Transvaal Museum' a specimen of the European Harrier-Eagle (*Circaëtus gallicus*) is recorded from the Pretoria district. I have this specimen now before me, and, although agreeing fairly well with descriptions of *C. gallicus*, I think there can be no doubt that it is really only an immature specimen of *C. pectoralis*. My reasons for saying so are :—Firstly, that, to

the best of my knowledge, *C. gallicus* has never been recorded from south of the Sahara. Secondly, that MM. Verreaux and Des Murs, writing on the genus *Circaëtus* in 'The Ibis' for 1862, page 209, while treating of *C. gallicus*, say : "One of us has had in his possession, at the Cape of Good Hope, young specimens of *C. thoracicus* (*pectoralis*), which have moulted under our eyes, and which, while altogether resembling *C. gallicus*, have finished, two years later, by assuming the plumage of *C. thoracicus* (*pectoralis*)."

Mr. J. H. Gurney, in the article mentioned above, draws attention to the above remarks, and adds :—" The most perfect example of this plumage which has come under my eyes is exhibited in a S. African specimen preserved in the Liverpool Museum, which might almost pass for an example of *C. gallicus*."

Podica petersi. Peters's Finfoot.

Some of Mr. Claude Grant's field-notes on this bird are so much at variance with my observations that I think a few comments are necessary. I have had a good deal of experience of this bird in E. Pondoland, where it is not uncommon, and where I must have seen a considerable number, and shot at least a dozen, and so far I have never seen one either dive or fly, and yet Mr. Grant says that it does both. I will take the subject of diving first. Near my camp on the Umtamvuna River there was a large deep pool surrounded with reeds, where I often spent an afternoon sitting on the bank fishing; this pool was also the home of a Finfoot, which I saw almost daily, and as it was by no means shy I had good opportunities of watching its habits. It often swam about quite close to me, feeding on insects in the water and on the reeds, and I once saw it jump right out of the water to reach a grasshopper sitting on a reed-stem overhead; it did not swim particularly deep, and looked much like a young Muscovy Duck while swimming : but I never once saw this bird dive. Most diving birds if suddenly surprised will dive ; but I have often come suddenly onto a Finfoot and it has immediately swam or flapped along the surface of the

water into the nearest cover. Diving birds, and even those water-birds that do not habitually dive, usually dive if wounded and pursued. I have even seen a wounded Common Sandpiper (*Tringa hypoleucus*) dive and swim under water; but I have chased a wounded Finfoot all round a pool without it attempting to escape by diving. Then Mr. Grant describes the flight of one of these birds as being "extremely fast and straight, resembling that of a Teal, but more rapid. This individual also dived straight under water with hardly any slackening of speed." As I said before, I have never seen one of these birds fly, unless flapping and paddling along the surface of the water may be described as flying. When pursued in a boat this has been the invariable way of escape of all those I have seen; after flapping along for a short distance they always dodged into cover and hid until routed out again, when they would repeat the manœuvre. One would think that if they could fly they would take to their wings at once.

In the former number of the 'Annals of the Transvaal Museum' referred to, a new Falcon is described as *Falco horsbrughi*. It would be interesting to know whether the two so-called "type" specimens have been compared with young specimens of *F. ruficollis*, as they agree very well with the description given of two young * by Mr. Sclater in the 'Fauna of S. Africa: Birds,' vol. iii., and still better with the description given by Mr. J. H. Gurney ('Ibis,' 1882, p. 162), who says:—"In *F. ruficollis* the young bird has the plumage throughout of a darker hue than the adult; this is especially the case on the crown of the head, where the rufous tint is deeper than in the adult, and, in addition, each feather has a somewhat broad black shaft-mark; all the feathers of the upper part of the mantle are more or less edged with rufous brown, this edging being broadest on the lesser wing-coverts; the transverse bands on the lower surface are less regular than in the adult, and all the inter-

* [The specimens in the Transvaal Museum were obtained at the nest, which contained young; presumably, therefore, they are adult birds. —Edd.]

mediate spaces are a rich fulvous, instead of being white as in the old bird."

In the last number of this Journal, Mr. E. C. Chubb contributes an interesting article on the rare birds in the Durban Museum. Mr. Chubb seems, however, to have overlooked the fact that I have already recorded some of them in my articles on the birds of E. Pondoland and Matatiele. I should mention the following three species in particular, viz. :—

Dendrocygna fulva. Whistling Duck.

I have recorded a specimen from Matatiele ; seen by myself and others shot by a friend near the same place.

Nycticorax leuconotus. White-backed Night Heron.

I have recorded this species from E. Pondoland, where I shot five specimens and saw others.

Acrocephalus palustris. Marsh Warbler.

I have recorded this species both from E. Pondoland and Matatiele. In both these places it is not uncommon in suitable localities. Here in Matatiele there is a privet hedge opposite my window : every summer this is the home of one or two of these birds, and all through the summer they sing almost continuously. I have a suspicion that this bird sometimes breeds in these parts, as towards the end of last summer one of these birds used to frequent our garden, and I used to see it daily, often quite close, and it was always followed by another, which, judging by its manner, appeared to be a young bird, as it continuously uttered a weak cry and quivered its wings after the manner of young birds whenever the other came near it, and I often saw it fed by the other.

Ciconia ciconia. White Stork.

In that number there are also several notes as to White Storks having been seen in various parts of the country during the winter months. I can add that during the whole winter of 1910 large numbers of these birds were observed

in this district, and in the following winters of 1911 and 1912 a few have also remained about the district. I also know of a single Greenshank which has spent the whole of the present winter on a pan near here.

I should like to conclude these notes with a protest against what seem to me to be the two great evils of modern Ornithology, viz., the constant search for priority in scientific nomenclature and the rage for creating subspecies. It would seem as if, now that the birds of the world are becoming so well known and new species getting scarcer, a certain class of naturalists must turn their busy brains to something, and having no new species to describe and name they must search about amongst ancient books and unearth long-buried and disused scientific names that, according to them, must take *priority* over names that have been familiar since the days of our great grandfathers, to the no small confusion of the average ornithologist. This is well exemplified in a recent number of 'The Ibis,' where such old friends as *Strix flammea* and *Anas boschas* have had their names altered beyond recognition. Luckily, the author of the article in question has added the more familiar names in common use. With regard to the modern rage for creating subspecies, of course it is well known that some birds have a very extensive distribution, and naturally, in some parts of their range, they are subject to changes of plumage, &c. By all means let these be named *if the differences are well marked*; but nowadays the smallest difference in the length of a bill, toe, wing, or slight variation of colouring seems to be an excuse for the bestowal of a name. Some naturalists seem to consider because a bird occurs in some small island it *must* differ from the same species on the mainland. A recent writer on the ornithology of a certain island has even gone so far as to differentiate such a migratory bird as the Cuckoo (*Cuculus canorus*). Is this bird resident on this small island, or does it shorten its visage when it arrives? Creators of geographical races often name these races after their friends or the discoverer, which conveys no meaning to the ordinary

ornithologist; it would be far better to name them after the country, province, or district they come from. Let me express a hope that it will be a long time before the Members of this Union worry themselves about these matters (although I see signs of it already). But, as very little has yet been recorded of the habits and distribution of South African birds, I would suggest that every Member should contribute to the Journal a list of all the birds found in his district, with full field-notes on habits, nidification, &c., from his own *personal* observation.

XI.—*The South African Lanner Falcon* (Falco biarmicus) *and its Congeners.* By B. C. R. Langford.

(Plate.)

The typical Lanner (*F. lanarius* *), of which *F. biarmicus* is the South African representative, may be said to have been rediscovered in comparatively recent times.

Though well known to, and sufficiently accurately described by, the old writers on Falconry, it was lost sight of on the decline of that art, and naturalists either denied its existence as a distinct species or wrongly attributed the name to other members of the genus. Thus, the Lanner of Linnæus and Nilsson is the Norway Gerfalcon (*F. gyrfalco*). Brünnich and Mohr under the name of Lanner describe the Merlin (*F. æsalon*). Pennant's Lanner is an immature Peregrine, whilst the young Peregrine figured by Buffon is in reality a young Lanner.

In 1829 M. Feldegg found the Lanner (*F. lanarius*) in Dalmatia, and it was considered by Natterer to be the *F. peregrinoides* of Temminck. Schlegel, on examining Feldegg's specimens, perceived Natterer's error, but believing it to be a new species named it *feldeggii* †. Later, however, when preparing his magnificent folio work on

* *Lanarius* "quod plumas multas, densasque et molles in modum lanæ habet."

† Abh. aus dem Gebiete der Zoologie, etc. tabb. 10 & 11.

SOUTH AFRICAN LANNER FALCON (Falco biarmicus).

Falconry *, he found that the so-called *F. feldeggii* answered quite well to Belon's description of the true Lanner, and reintroduced it therefore to science under its right name †.

F. lanarius is a native of Eastern and South-eastern Europe and North Africa; in Egypt it is found breeding on the Great Pyramid ‡. In Central and North Central Africa its place appears to be taken by *F. tanypterus* (the Alphanet Lanner of the old writers), and in South Africa by our *F. biarmicus*. How far these two latter forms may overlap does not seem to have been accurately determined.

The Lanners belong to the group of "Desert" Falcons (*Gennæa* of Kaup), which differ from the true Falcons in having relatively longer wings and tails, looser and softer plumage, and smaller feet and beaks. Insects, reptiles, and small mammals form a large proportion of their diet.

In the adults the breast-markings never become transverse, and in the Lanners consist of cordate or sagittiform spots—in *lanarius* fairly evenly distributed over the whole under surface, but in *biarmicus* confined to the flanks and thighs. With their light bodies and weak plumage they cannot fly well in a high wind.

Photographs of a male Lanner of two moults—*i. e.*, three years old,—trained by the writer, accompany this article. The following are the principal dimensions:—Wing $12\frac{1}{8}$ inches, tail $6\frac{1}{2}$ inches, total length $16\frac{1}{4}$ inches. The wings when closed reach almost to the end of the tail. The second primary is the longest, the first shorter than the third. Middle toe $1\frac{3}{4}$ inches; greatest length of foot $3\frac{3}{4}$ inches. Legs, feet, cere, and eyelids bright yellow; irides dark hazel. Weight 18 oz. The tooth on the upper mandible is prominent and acute and there is some trace of a festoon.

Though swift of flight the Lanner is by no means persevering, and for field work is far inferior to the

* 'Traité de Fauconnerie,' par H. Schlegel et A. Verster van Wulverhorst. Leiden et Düsseldorf, 1844–53. Atlas folio.

† *Vide* 'Revue critique des Oiseaux d'Europe,' p. 12.

‡ *Cf.* Gurney and Salvin.

Peregrine. It is lazy and, unless sharp set, will not stick to difficult quarry. I have, unfortunately, had little opportunity of observing this bird in its wild state, but it appears generally to content itself with very humble quarry, though it is a great enemy to Quail and will follow a shooting-party with great boldness if unmolested, as Mr. Davies has told us, and will carry off birds that are sprung by the dogs *. An officer of some experience with these birds tells me that he has a poor opinion of their courage and that he has known them, when trained, to check in midflight at locusts or other insects.

Nevertheless, it was formerly in some repute in Europe, especially in France and Italy, where it could be flown more successfully than in the more boisterous weather of Great Britain; thither, however, as appears from old account books, it was imported in considerable numbers. I am, of course, speaking of *lanarius*, though *tanypterus* was imported into Europe from North Africa too.

The male was formerly called a Lanneret, and appears to have shared with the Merlin and Sparrow-Hawk the distinction of being the lady's Hawk †.

The stoop of the Lanner is neither so forcible nor direct as that of the Peregrine, and in my experience it seems to prefer clutching to giving a knock-down blow. It can follow every turn and twist of the quarry, and a pair of them were seen to capture a Swallow after a long chase. Properly handled they ought, I think, to make good Plover Hawks.

In Humbe, according to Anchieta, the native name signifies "hare-killer," but on what grounds I do not know. Canon Tristram, however, tells us that the Arabs train their Lanners (*tanypterus*) to hares; the Algerian hare, however, is a puny quadruped. Lanners have been known to stoop at a cat, and Mr. L. E. Taylor shot one in the act of so doing. In this

* Journal of the Union, July 1911, p. 38.

† "Les dames," says Rabelais, "montées sur belles hacquenées .... portaient chascune ou un épervier, ou un *lanneret*, ou un émérillon."

case the cat was a white one and could not have been mistaken for a hare or any wild mammal. Probably the Falcon thought that the cat was an intruder on her special rat preserve.

The male Lanner described above at one time, when put on the wing to the lure, would stoop at my Irish terrier and either make him lie down or drive him off the ground. In Basuto folk-tales, Mr. Murray tells me, the Lanner is called "Pakhui," or the Policeman.

Though in Europe, where Peregrines can easily be procured, no falconer at the present day would think Lanners worth training, out here, where they ought to be easily procured, they are worth a trial by anyone whose tastes lie that way. They are easily trained and become very handy and even affectionate.

I say *ought* to be easily procured, as in certain districts they are fairly common, but, as a matter of fact, I find the greatest difficulty in obtaining them; and if any reader of these lines will put me in the way of getting either Lanners or Peregrines (*F. minor*), young or old, newly taken and uninjured, he will earn my lasting gratitude.

XII.—*The Wild Birds of the Pretoria Zoological Gardens.* By Alwin Haagner, F.Z.S., Col. Member B.O.U., Hon. Mem. Royal Hung. Bur. of Ornithology (Superintendent Tvl. Zool. Gardens).

During the last couple of years the wild bird-life in the Zoo has been on the increase, and every now and then I see a bird here not previously noticed. In fact, there have been one or two birds seen here which are rare so far south, and I thought, therefore, that if a list was compiled, and added to occasionally, it might be of some interest.

1. Rhinoptilus chalcopterus (Temm.). Bronze-wing Courser.

I saw two examples of this (to the Central Transvaal) rare

Courser on the northern extension of the Zoo on two separate occasions. The first one I saw in April and the second in June. I could not help noticing how well the bird's colour harmonised with the half-dried grass-tufts and stones which surrounded it, and how it cowered in a half crouching attitude when approached, before taking wing. A specimen was caught in a Pretoria garden and brought to the Zoo.

2. Charadrius tricollaris, Vieill. Three-banded Plover.

One or two may be seen poking about the banks of the Aapies River almost any day.

3. Totanus glareola (L.). Wood Sandpiper.

I have so far only seen one of these birds on the river.

4. Tringoides hypoleucos (L.). Common Sandpiper.

Several of these seen at odd times.

5. Ciconia ciconia (L.). White Stork.

Often seen flying over the gardens. One flew over and circled round the large duck-ponds on the 4th June.

6. Scopus umbretta, Gm. Hammerkop.

An occasional visitor to the river.

7. Ardetta payesi (Verr. Hartl.). Red-necked Little Bittern.

I saw what I feel sure was an example of this species, standing at the edge of the water in front of a bed of reeds and rushes in the river. It disappeared into the thicket as I approached, and did not reappear although I waited some considerable time. The keeper in charge of the Birds tells me he saw an example of this species on two separate occasions near the same spot where I had seen my bird.

8. Turtur senegalensis (L.). Laughing Dove.

Very common in the Gardens, where it breeds freely.

9. Turtur capicola (Sund.). Cape Turtle-Dove.

Also fairly common in the Gardens at times, but rather local in distribution and uncertain as to time.

10. Numida coronata, G. R. Gr. Crowned Guinea-fowl.

Often invade the Gardens from Eloff's Plantations. Last year we captured a few young ones only a couple of days old. The instinct of these tiny creatures is worthy of note. We would wait until we heard the young ones calling and then dash up to the spot; unless very quick one would lose sight of them all, the warning note of the old birds causing the little ones to scatter and crouch down amongst the shrubby herbage and stones of the hillside. The only way was to stand dead still for some minutes until one of them moved, and then catch it quickly with the hand. The protective coloration of the little ones in their striped downy covering is wonderful.

11. Kaupifalco monogrammica (Temm.). African Buzzard-Eagle.

One would not have expected this species to occur in the Gardens, but one of the keepers winged one on August 23rd, 1912. The bird recovered, and is now in the aviary with another of its species from Rhodesia.

12. Astur polyzonoides (A. Sm.). Little Banded Goshawk.

This is quite a common little Hawk in the Gardens, and I have seen as many as three of them together.

13. Accipiter minullus (Daud.). Little Sparrow-Hawk.

An occasional visitor. A pair used to frequent the precincts of the Squirrel Camp and carry off the young guinea-pigs, until they were shot.

14. Micronisus gabar (Daud.). Gabar Goshawk.

A solitary individual haunted the neighbourhood of one of the camps where there were young Peafowl for some days.

15. Cerchneis rupicola (Daud.). South African Kestrel.

A solitary individual may occasionally be seen on the rocky ridge behind the Ostrich-breeding camp.

16. Chrysococcyx cupreus (Bodd.). Golden Cuckoo.

A regular visitor to the Gardens, where its call often heralds the advent of summer. This year they seem to be late, as I have not heard them yet (23/9/1912). I took a young one out of a Sparrow's nest last year.

17. Colius indicus, Lath. Red-faced Coly.

Sometimes visits the northern extension in flocks, especially when the wild medlars and "Stamvrugte" are ripening.

18. Halcyon albiventris (Scop.). Brown Hooded Kingfisher.

I saw a pair last summer, which haunted the precincts of the duck-ponds for some days.

19. Ceryle rudis (L.). Pied Kingfisher.

Single examples have on various occasions visited the duck-ponds.

20. Merops apiaster, L. European Bee-eater.

The tall trees at the bottom of the Gardens, on the banks of the Aapies River, form a regular roosting-place for this species, where their shrill cries may be heard every evening at sunset during the summer months.

21. Caprimulgus rufigena, A. Sm. Rufous-cheeked Nightjar.

I saw a Nightjar on several occasions, and took it to be of this species.

22. Apus caffer (Licht.). White-rumped Swift.

Several seen crossing the terrain at odd times.

23. Hirundo albigularis, Strickl. White-throated Swallow.

Often seen sitting on the fences. I saw another species, but it was too far off to determine with certainty.

24. Sigelus silens (Shaw). Fiscal Flycatcher.

Very common in the Gardens, and breeding in the privet and macrocarpa hedges.

25. Muscicapa grisola, L. Spotted Flycatcher.

Very common during April of last year, and March and April of this year, prior to its immigration home.

26. Tchitrea plumbeiceps (Rchw.). Lead-headed Flycatcher.

I have seen a number of these beautiful birds in the grounds at odd times, but never more than one at a time. At Irene and the Fountains near Pretoria they are quite common. It seems as if both this and the commoner *T. perspicillata* inhabit the district.

27. Pelicinius zeylonus (L.). Bakbakiri Bush Shrike.

One heard calling in a macrocarpa hedge on the 20th September, 1912. I saw an immature bird in a quince hedge last summer, so conclude they breed in the grounds.

28. Ploceus cabanisi, Ptrs. Masked Weaver.

A colony nested in a couple of old oak trees last summer. It seems to me that both *P. velatus* and the present species are found in the district, but the subject requires working up.

29. Ploceus auricapillus, Sw. Lesser Masked Weaver.

Common in the Gardens in summer and breeding. They suspend their nests to the twigs of the silver wattle, and also to the pendent branches of the weeping willows.

30. Ploceus capensis olivaceus (Hahn). Olive Weaver Bird.

Builds in the willow trees overhanging the duck-ponds.

31. Quelea sanguinirostris lathami (A. Sm.). Pink-billed Weaver.

These birds enter through the meshes of the large flight aviary in hundreds, and take up their abode there for the winter months.

32. Pyromelana taha (A. Sm.). Taha Bishop Bird.

I have seen a few of these at various times, flitting about in the reed-beds near the river.

33. Pyromelana orix (L.). Red Bishop Bird.

Very common in the summer months and breeding in the reed-beds of the Aapies River.

34. Coliuspasser ardens (Bodd.). Red-collared Widow Bird.

Breeding in the reed-beds, but not plentiful like the preceding species.

35. Amadina fasciata (Gm.). Cut-throat Weaver Bird.

I saw one hopping about near the small birds' aviary for some days in August of this year, and thought it was an escaped specimen until some boys brought in a couple of dozen caught with bird-lime at Daspoort, not a mile from us.

36. Ortygospiza polyzona (Temm.). Quail Finch.

I saw a small flock of these tiny birds on the northern extension of the Zoo in March of this year.

37. Hypochera funerea (Tarrag.). Black Widow Finch.

I saw a solitary individual on the 3rd January of this year.

38. Passer melanurus (St. Müll.). Cape Sparrow.

Very common and breeding freely.

39. Fringillaria tahapisi, A. Sm. Rock Bunting.

I saw a pair on the hill during the month of February last year.

40. Motacilla capensis, L. Cape Wagtail.

A single example entered the large flight aviary through the wire netting on the 25th June this year, and has lived there happily ever since. The bird is fairly common in the Gardens and an early breeder. A nest with three young ones was found in a clump of pampas grass in September of last year.

41. Pycnonotus layardi, Gurn. Blackcap Bulbul.

Visits in the fruit season.

42. Zosterops virens, Sund. White-eye.

Common at times.

43. Chalcomitra amethystina (Shaw). Black Sunbird.

Common in the Gardens, especially when the *Erythrina* trees are in bloom. I took two ticks (*Hyalomma ægyptium*) from the forehead and throat of an example brought in for sale from the bush veld. The ticks were kindly identified by the Gov. Vet. Research Laboratories of Pretoria.

44. Cinnyris leucogaster, Vieill. White-breasted Sunbird.

I have seen several of these pretty little Sunbirds haunting the grounds.

45. Cinnyris mariquensis, A. Sm. Bifasciated Sunbird.

I had seen only a solitary individual now and then prior to this spring, but during September of this year there were dozens in the grounds. They seem very partial to the white flowers of an acacia, and have a sweet little song, not unlike that of the Mountain Canary.

46. Cisticola tinniens (Lcht.). Common Grass-Warbler.

Fairly common along the river.

47. Prinia mystacea, Rüpp. Tawny-flanked Wren Warbler.

A few haunt the rocky ridge along the northern extension.

48. Crateropus jardinei, A. Sm. Jardine's Babbler.

There are quite a number of these birds in the grounds now, probably attracted there by those in captivity. They must breed here too, as I saw one feeding a couple of young birds, apparently just flown, one day last summer. They are very noisy birds.

49. Turdus cabanisi (Bp.). Cabanis's Thrush.

Resident and breeding in the Gardens.

50. Cossypha caffra (L.). Cape Robin Chat.

Common and breeding.

XIII.—*The Value of Birds to Man.* By James Buckland.

[A Paper read at a Meeting of the British Empire Naturalists' Association, held at the Hall of the Royal Society of Arts, John Street, Adelphi, December 1, at 8 p.m., Walter Crane, Esq., R.W.S., in the Chair.]

The Use of the Birds in Nature.

Man has become the dominant power on the earth. He has delegated to himself the right to adopt a utilitarian standard by which he measures the usefulness or destructiveness of all other forms of life. All animals which injure his person or his property he classes as injurious. All animals that contribute to the increase in value of his property, or to his comfort, he considers beneficial. Beauty he disregards, devastating the wild places of the earth in mere wantonness of strength. But let that pass for the present. To take him from his own standpoint, is he not sometimes in error? In his grasp for the useful, has he not overlooked the beneficent power of the bird?

To answer this question we must first determine what particular functions it is in the economy of Nature that birds alone are fitted to perform.

Vegetation is the prime requisite for the perpetuity of all other forms of life upon the earth. It is the only form in organic nature that does not war upon other forms. The greatest known enemy to vegetation is insect life; while bird life, by virtue of its predominating insect diet, wields a most important balance of power against the ravages of this the chief pest of vegetation.

This is the principal mission of the bird in preserving the balance of Nature's forces; and when we remember that birds are distinguished from all other animals by organs of perfect flight, when we remember that the sense of sight in birds is developed to a degree unparalleled in the animal world, when we remember the surpassing breathing-power possessed by birds, their wonderful muscular strength and activity, the high temperature and rapid circulation of their blood, and, as necessary fuel for all these fires, their extraordinary capacity for assimilating food, we must admit that these marvellous creatures are admirably fitted to pursue and capture their natural prey, or, by making earth-wide sweeps from zone to zone, to follow the seasonal ebb and flow of the tide of insect life. We must admit that no other class of animals could fill their peculiar place.

Number and Reproductiveness of Insects.

That you may see how essential the bird is as a part of Nature's great plan I propose making brief mention of the enormous number of insect species, of their stupendous powers of reproduction, and of their insatiable voracity.

The number of insect species is greater by far than that of the species of all other living creatures combined. Over 300,000 have been described, and it is considered not improbable that twice that number remain to be described. Practically all living animals, as well as most plants, furnish food for these incomputable hordes. More than this, Kirby, in the 'Introduction to Entomology,' devotes no less than five entire epistles to the injuries we sustain

from insects, whilst two only are sufficient to describe the benefits they yield.

The fecundity of certain insect forms is astounding, the numbers bred reaching such prodigious proportions as to be almost beyond belief. Riley once computed that the hop aphis, developing thirteen generations in a single year, would, if unchecked to the end of the twelfth generation, have multiplied to the inconceivable number of ten sextillions of individuals. Noting the preceding, Forbush says if this brood were marshalled in line, ten to the inch, it would extend to a point so sunk in the profundity of space that light from the head of the procession travelling at the rate of 184,000 miles per second would require 2500 years in which to reach the earth.

Kirkland has computed that one pair of gipsy moths, if unchecked, would produce enough progeny in eight years to destroy all the foliage in the United States.

A Canadian entomologist has determined that a single pair of Colorado beetles, without check, would multiply in one season to 60,000,000 units.

The filibusters of old, who carried on their nefarious business chiefly within tropical areas, declared that of all dangers, and of all pains, they dreaded most the wounds of insects. No surgical instrument ever invented by man could inspire more terror than the implements insects possess for piercing, cutting, dissecting, and rending. These appliances, which are used to do battle with animal and vegetable life, are equalled in horror only by the furious ravenousness of the insects.

Indeed, the voracity of insect life is as astonishing as its power of reproduction. Many caterpillars consume twice their weight of leaves per day, which corresponds to a horse eating daily a ton of hay. Forbush says that a certain flesh-feeding larva will consume in twenty-four hours 200 times its original weight, a parallel to which, in the human race, would be an infant consuming, in the first day of its existence, 1500 pounds of beef. Trouvelot, who made a special study of the subject, affirms that the food taken by

a single silkworm in fifty-six days equals in weight 86,000 times its original weight at hatching. What a destruction this single species of insect could make, if only a one-hundredth part of the eggs laid came to maturity!

Man at War with Nature's Laws.

The development of young birds is so rapid, and the demand upon the vitality of older ones so great, that an enormous amount of food is necessary to sustain the vital processes. Digestion is exceedingly rapid in birds, and they feed for the most part throughout the day, especially when rearing young. The number of insects daily passed into the insatiable maws of the nestlings during this period almost exceeds belief.

But the most valuable services of the adult bird are rendered when it is feeding in winter or early spring; for then it destroys countless numbers of insects in the embryo state, and thus prevents myriads of depredators from coming forth.

Grave and far-reaching results invariably follow the suppression of this perennial regulative influence which is exerted by birds individually everywhere as a check on insect life.

Some years ago the agriculturists of Hungary, moved to the insane step by ignorance and prejudice, succeeded in getting the Sparrow doomed to destruction. Within five years these same men were crying frantically for the bird to be given back to them, lest they should perish; and it cost the Government 230,000 rix-dollars to re-instate the outlaw. So the Sparrow was brought back, and, driving out the hordes of devastating insects, proved the salvation of the country.

In the Island of Bourbon once, because of the same ignorance and prejudice, a price was set on each Martin's head. The birds all but disappeared, and grasshoppers took possession of the island. Then the edict of banishment was

hurriedly revoked and the exile recalled. And fortunate indeed was it for the Island of Bourbon that the bird was not beyond recall.

During the year 1861 the harvests of France gave an unusually poor return, and a Commission was appointed at the instance of the Minister of Agriculture to investigate the cause of the deficiency. By this Commission the deficiency was attributed to the ravages of insects which it was the function of certain birds to check. These birds, it appeared, had been shot, snared, and trapped throughout the country in such numbers that but little repressive influence had been exerted upon the insects. In one department of the east of France the value of the wheat destroyed in a single year was estimated at 5,000,000 francs.

For some years prior to 1877 vast numbers of red-winged Blackbirds were poisoned in the spring and autumn round the cornfields of Nebraska. This was done in the belief that the Blackbirds were damaging the crops, especially the wheat. Great numbers of Prairie Chicken, Quail, Plover, and various other insect-eating species were destroyed at the same time by eating the poisoned grain. Then came 1877, and with it Nemesis. The locusts appeared in countless numbers, and Nebraska mourned. Hardly a field of grain escaped.

An astounding number of bird-skins are collected annually for hat decorations in Russian Siberia. In 1895 the ravages of two species of cut-worms and some ten species of locusts produced a famine in the region of Ekaterinburg, which is in Russian Siberia. The local Society of Natural Sciences inquired into the cause which had permitted such a numerous propagation of insect pests, and reported that it was due to the almost complete destruction of birds, most of which had been killed and sent abroad by wagon-loads for millinery purposes.

Though I could give a hundred cases similar to the foregoing, I must rely on the few I have cited to convince you that the wholesale destruction of birds is surely followed by disaster to man.

Value of the Bird in Checking Insect Irruptions.

The marvellous powers of flight and perception possessed by birds ably fit them to perform the office of a swiftly-moving aerial army, large forces of which can be massed at any given point to correct disturbances caused by abnormal outbreaks of animal or vegetable life.

When the Mormons first settled in Utah their crops were destroyed utterly by myriads of black crickets that streamed down from the mountains. Promising fields of wheat in the morning were by evening as bare as though the land had not been sown. The first year's crop having been destroyed, the Mormons had sowed seed the second year, and again the crop promised well. But again the crickets appeared, devouring every blade of wheat, and the followers of Joseph Smith were on the verge of starvation. At this juncture Franklin's Gull came by hundreds of thousands, and, feeding greedily on the crickets, freed the fields of the pest. The settlers at Salt Lake regarded the advent of the Gulls as a heaven-sent miracle, and practically canonised the birds. Several times afterwards the crops of the Mormons were attacked by the crickets and were saved by the Gulls.

In the early days of the colonization of New Zealand swarms of caterpillars infested the open tussock-clad country. When the white man began to cultivate the land this caterpillar disappeared from its old haunts and attacked the English grasses and cereal crops, increasing so enormously in numbers by reason of a more favourable environment that they quickly became a blasting plague. They came not singly, or even in battalions, but in mighty armies, which laid waste the land. I have seen regiments of this invading force cover the pastures in such numbers as to make the green one brown. I have seen them march out of one cornfield—having stripped every stalk bare—cross the road in solid phalanx and pass into another. I have seen big mobs of sheep mustered in hot haste and driven backwards and forwards to crush the atoms with their hurrying feet. I have seen every available horse-roller in a district brought

up hurriedly, like engines to a fire, and dragged to and fro over the crawling masses until the huge cylinders stuck fast in a mire of crushed insects. I have seen large ditches dug in an attempt to stop the invaders' progress. The effort was as futile as that of a child who builds a bank of sand by the sea, thinking it will stem the oncoming tide. Even railway trains were brought to a standstill, the wheels of the engines being unable to grip the rails owing to the countless hordes of caterpillars which were crossing the line.

In time it became abundantly clear that if this disastrous condition of affairs continued it would be useless to attempt to carry on agriculture in New Zealand. Realising that any attempt which they might make to rid the smitten land of the plague would be but a mockery, the farmers turned their eyes longingly to the natural enemy of the caterpillar—the bird. But the native birds—though they had lived in closest companionship with the Maoris—had been taught the treachery of the white man in a school that reeked with blood, and those that had not been killed had retreated from the vicinity of the settlements, visiting the insect-ridden fields occasionally only.

Wherefore insectivorous birds from the old country were introduced, and the one that multiplied most rapidly was the Sparrow. And the Sparrow soon cut short the career of the caterpillars.

I have said that birds, because of their unrivalled powers of locomotion, are peculiarly adapted to suppressing unusual outbreaks of vegetable as well as of animal life. Here is an instance of this.

That formidable imported weed, the variegated Scotch thistle, threatened at one time to overrun the whole of New Zealand. Where it had once fairly established itself it seemed well-nigh impossible to eradicate it; and it was spreading with the speed of scandal. Much time and money were spent in cutting off the plants close to the ground, and in pouring turpentine upon the stumps. But the wind-driven clouds of thistle-down, which were planting the weed far and wide, grew yearly denser and more frequent. At

length the fields became a thickly-packed growth of prickly plants, which nothing could face.

The Sparrows took to eating the seed. In tens of thousands they fed on it, giving it the preference of all other hard food, and the weed was conquered.

To-day, in New Zealand, the Sparrow is looked upon as an impudent thief, without a redeeming feature in its character.

No one, of course, can say what would happen if the Sparrow was dismissed from New Zealand, but it is as certain as anything in this world can be that the Dominion would be again overrun with caterpillars and thistles.

As it is, the good the Sparrows do must far outweigh the mischief which is laid to their charge. This statement receives the amplest confirmation in the bountiful harvests with which New Zealand is blessed. Never were the Sparrows more numerous, never the complaints against them more bitter; yet the yield of grain is without precedent.

The growling of the New Zealand farmer at the Sparrow, again, justifies Virgil's complaint of the "miserly husbandman." Miserly, indeed, and blind. Not a grain will he give the bird which has laboured unceasingly for eleven long months to free the soil from grubs; but whole fields of wheat to the caterpillar!

In Australia a plague of grasshoppers periodically visits the paddocks to devour the crops. But the ruin they would otherwise bring on the farmer is checked by large flocks of Glossy Ibises, Spoonbills, Cranes, and other native birds. It has been computed by an eminent naturalist that a flock of 200,000 of these saviours will consume in a single day 25 tons of grasshoppers.

It is for this reason that the people of the Commonwealth view with such grave apprehension the continual slaughter of native birds, for their loss is rendering the country ever more prone to the plague of grasshoppers.

The Plumage Bill.

Here I intend to make a slight digression. Quite recently the Textile Trade Section of the London Chamber of Commerce submitted to the consideration of the Melbourne Chamber of Commerce a book, issued for the purpose of attempting to refute certain statements made to the detriment of the feather-dealers.

In its reply the Melbourne Chamber of Commerce pointed out that the work performed by the wild birds in the Commonwealth alone, in keeping in check the ravages of myriads of noxious insects, was worth many millions of pounds sterling. The natural enemies of insect pests were the birds, and were they destroyed Nature would become unbalanced and successful agriculture become impossible. The London Chamber of Commerce was also informed that the value of birds in life was infinitely greater to the community than would be the profit accruing from the sale of their feathers, and that, therefore, the Melbourne Chamber of Commerce was unable to support the position taken up by the book in question.

Yet bird-skins from Australia, every one of them illicitly exported, are regularly trafficked in by London feather-dealers. More than this, the President of the Board of Trade and the Secretary of State for the Colonies, ignorant of, or indifferent to, their responsibilities to the Empire, are heedless of the awful calamity their neglect is fostering.

The Value of Birds in Forests.

Birds attain their greatest usefulness in the forests, because the conditions there closely approach the primeval.

Forest trees have their natural insect foes, to which they give food and shelter ; and these insects in turn have their natural enemies among the birds, to which the tree also gives food and shelter. Hence it follows that the existence of each one of these forms of life is dependent upon the existence of the other. Birds are not only essential to the

well-being of the tree, but the tree is necessary to the life of the bird.

Consider for a moment the life of a tree in connection with the insects that prey upon it. At the very beginning, before the seed or nut has germinated, it may be entered by a grub which destroys it. Should, however, the seed or nut be permitted to grow, the roots of the seedling may be attacked by beetles. Escaping this danger, a worm lays its eggs in the cracks of the bark. On hatching, the worm, or borer, perforates a hole in the stem. This hole, admitting water from every passing shower, causes a decay in the wood to commence, from which the tree may never recover. Other borers feed upon the bark, eating the soft inner layer and the sap. The twigs are affected by the larvæ of certain beetles, which act as girdlers, sometimes destroying limbs over an inch in diameter. Weevils bore under the bark and into the pith, making excavations in which the eggs are laid. For the same purpose the cicada makes a terrible wound, which often proves fatal. The limbs of trees are affected by aphides, which puncture them and feed upon their juices, exhausting the sap. Many species of plant-lice and scale-insects infest trees, doing great damage; while over 100 different species of gall-flies are parasitic upon them. The buds of trees are entered and destroyed by the larvæ of certain moths, while the leaves are devoured by caterpillars. To take the oak as an example, it is known that altogether over 500 species of insects prey upon it. Finally, be it remembered that in the bark and the underlying tissues lie the vital energies of a tree.

It is difficult to perceive the usefulness of these insects which feed on the different parts of the tree, though they may, perhaps, when in normal numbers, exert a useful influence by a healthful and necessary pruning. It is certain, however, that if they were not in turn preyed upon by birds, they would so increase in numbers, that the tree could not survive the injuries they would inflict.

I spent the formative period of my years in, or in close proximity to, primeval forests, and going often to Nature's

mighty school to learn her secrets I was lastingly impressed by the way in which the care of the tree is kept up throughout the changing seasons by bird life, each species exerting its peculiar repressive influence upon the increase of this or that one of the various forms which insects assume.

How dependent trees are on birds for their existence may be gathered from the following illustration, instances of which I have often seen when the services of one or more of their natural protectors have been withdrawn. As many of you probably know, trees breathe through their leaves. Consequently, if the buds of the leaves are prevented from developing, or are eaten, when developed, by caterpillars, the tree is weakened. Many coniferous trees will die if stripped of their foliage for one year. Deciduous trees, if deprived of their respiratory organs for several years in succession will also perish, though these trees linger as a rule for two, or even three, years before finally succumbing.

Nor is injury to its breathing-organs the only danger to which a tree afflicted in this way is subjected. The tree, being in a weakened condition, is at once beset by beetles and other borers, who, multiplying rapidly under such favourable conditions, tunnel under the bark until all the vital tissues of the poor tree are wasted. Thus a tree, which might have recovered from the injury to its lungs, falls a victim to the attacks of an insidious enemy which took advantage of its feeble state.

Woodpeckers, or other birds of similar feeding-habits, would have flown to the rescue of the tree and possibly saved its life ; but when that corrective influence is missing the tree must die.

This illustration of the dependence of the tree on the bird, and of the bird on the tree, is, of course, but one of a long series that could be cited, and it is because of this most delicate adjustment between the tree, the insect, and the bird that I regard as profoundly true Frank M. Chapman's statement "that it can be clearly demonstrated that if we should lose our birds we should also lose our forests."

I stated at the commencement of this paper that man had attained to a predominance over the wild things of the earth. I was wrong. Tigers man may be able to subjugate, but against insects, which are even more dangerous to human life and property than tigers, he is powerless. If, in his folly, he drove out the bird, thinking himself capable of taking its place, he might be able to make shift with his sprays to save some portion at least of his orchards and gardens ; but of what avail would be his puny efforts to protect from the ravening maws of insects the forests of South America and Africa, the jungle of Asia, or the bush of Australia ? Should he not, then, protect by every means in his power every one of the forest birds, who, as a matter of course, and without trouble or expense to him, ordinarily accomplish, on his behalf, this superhuman task? One would think so. Yet in these very regions, in these vast areas of valuable timber, every trunk of which man will some day need, there are being killed annually millions of the feathered guardians of the tree, and killed, too, for no worthier purpose than that, dead, they may defame a woman's head.

The Value of the Bird in the Orchard.

For man's purposes the work of the bird in the orchard is not so thorough as that done by them in the forest. Birds are the slaves of Nature, and, in the main, Nature's endeavours are put forth only to produce such fruits as will ensure the perpetuity of each species of tree. With man the case is altogether different. His main object is not the propagation of trees, but the production of a giant gooseberry. Moreover, by introducing arsenical spraying, tarred and greased bands, and other devices to counteract the evil action of insects, he has, to a certain extent, taken upon himself the office of the bird. In this he is wise, for it must be admitted that if he wishes a large crop of fruit he must himself prevent the inroads of those insects which attack the fruit directly. It cannot be expected of the bird that it will

become an efficient ally of man in protecting the artificially produced fruit from the attacks of the numerous insects that are drawn to the orchard by a vastly increased quantity of fruit of a vastly better quality than the natural product.

For all that, fruit-growers are largely indebted to the bird for a great part of their annual crop. There are a host of tiny creatures that are not affected by spraying. These lilliputian pests are the plant lice and their allies, bark lice and scale insects. Usually their presence is unnoticed on account of their diminutive size; but they suck out the juices of the tree and are exceedingly harmful. If their multiplication remained unchecked, the ultimate result upon the development of the fruit, if not upon the life of the tree, would be very great. But nothing, however small, escapes the prying eyes of a bird, and it clears the trunk, branches, and twigs of the tree of these encumbrances.

Birds are charged, as though the case were one of theft, with feeding to a greater or less extent on the fruit which they help to produce. In Nature, such services as the bird renders in direct protection of the fruit is placed to its credit and it receives its reward. Does man expect it, for his sake, to deviate from those habits which it has contracted under natural conditions? In other words, does he expect the bird to assist him in producing an unnatural surplus of fruit?

Call the bird in the orchard an evil—if you will. But it is a necessary evil, and the fruit-grower must make up his mind to pay the bird its wages, even though at times they may seem exorbitant.

But let us suppose for a moment—though the supposition is absurd—that the modern fruit-grower could do without the services of the bird. Would that give him a right to slay it? Apart altogether from the agriculturist, what of the millions of people who, as an increment to their ordinary livelihood, grow fruit, but who cannot afford either the time or the money to treat their trees in the most approved and scientific way?

What would happen to this poorer class of fruit-growers

if they were deprived of the services of the bird is best seen in what happened to Frederick the Great. This worthy, in a fit of passion because a flock of Sparrows had pecked at some of his cherries, ordered every small bird that could be searched out to be instantly killed. Within two years his cherry-trees, though bare of fruit, were weighed down with a splendid crop of insects.

The Services of the Bird in the Garden.

The garden is the insect's paradise. It fares sumptuously every day on the most succulent of vegetable foods. Every opportunity is thus offered for its increase. The greatest insect enemy of the gardener is a small, dull-coloured, hairless caterpillar, known as the cut-worm, which is the larva of a Noctuid moth. This chief of the brigand band of garden pests usually hides during the day beneath matted grass, or under the loose soil along the rows of plants. It comes forth at dusk to feed. The bird is abroad at the first peep of day, and it finds the robber-worm in the morning before it has retreated to its place of concealment.

The cut-worm, by the way, is the worm which is associated with the early bird in the well-known proverb.

But the bird has to come stealthily to the garden. Its visits are regarded by man with more than suspicion, and it is fortunate if it escapes with its life. In consequence, it snaps up a caterpillar and is off again, leaving thousands it would have eaten, if unmolested, to run riot among the vegetables.

Occasionally a bird more bold than its fellows will visit the garden in broad daylight to dig the cut-worms out of their hiding-places. Nature never having begrudged it the reward of its toil, the bird takes a few peas before leaving.

The gardener notices the damage done to his peas, and next morning is up betimes. He sees the early bird running along a row of peas, stopping frequently to peck at something. There is a loud explosion, followed by a puff of

smoke. The smoke slowly drifts away, to disclose a bird lying dead.

Caterpillars are not gifted with a voice. If they were they would scarce forbear to cheer.

The bird is dead. Mark the sequel. One fine morning the gardener issues proudly forth to cut his mammoth cabbage—the one with which he intends to put to utter confusion all other competitors at the local fruit and flower show. Alas for human hopes and the depredations of caterpillars. The cabbage is riddled like a colander.

The gardener, when he shot the bird, forgot, if, indeed, he ever knew, that the ancient law forbade a muzzle to the ox that threshed out the corn.

Utility of Birds in the Meadow.

Each season, until hay-making commences, the grass offers cover and shelter for the nests of such birds as breed on the ground. The fields also provide food for birds, and for the insects on which birds feed. Thus there is established a natural interrelation and interdependence between the bird and its food and shelter—that is to say, the insects and the grass. This simulates the condition of the earth before man made discord in the grand harmony of Nature's laws.

Where the birds of the field are undisturbed they tend to hold the grass insects in check. On the other hand, when the numbers of birds in the field are, for any reason, insufficient, the insects increase.

Here is an instance of this. Some years ago in Bridgewater, Massachusetts, a great battue was held by the ignorant townspeople in the spring of the year, and so many field birds were killed that their dead bodies were ploughed into the land for manure. The following summer whole fields of grass withered away and died. This was due solely to the fact that the number of field birds had been reduced, and, in consequence, the pressure which Nature demands the field birds shall exert upon the field insect had been released.

Again, at one time, in New Zealand, it was no uncommon thing to see English grass wither up in large patches, as though scorched by fire. This was due to the work of a crane-fly and click-beetle, the larvæ of both of which were addicted to the habit of eating the roots of the grass, just under the surface. English grass was then comparatively limited in the up-country districts, and, as there are large tracts of land in New Zealand destitute of native grasses, the depredations of these insects became a serious matter to those settlers who had stock to feed, and who were relying on the English grass to feed them. It was all the more serious because the insects were without any natural check, the native birds which had kept their numbers down before the advent of the white man having been scared from the vicinity of the homesteads. So the beetles continued to make merry, to marry, and to multiply. In a corresponding ratio the grass continued to fade, to wither, and to die.

Then came the English Starling ; and so voraciously did it feed on the larvæ that soon all was green again.

Without birds, provided insects were present, grass could not be grown. The grub of a single species of beetle, if unchecked, could destroy all the grass roots of our meadows, or any one of the several species of cut-worms might be sufficient to destroy all the verdure above ground.

Hawks and Owls.

The injury to crops and grass by insects is not the only evil that threatens man as a sequence to the destruction of birds. Rapacious birds hold a chief place among the forces which are appointed to hold in check small rodents, which breed rapidly, and, unless kept within bounds, are exceedingly destructive. Yet, notwithstanding the unanimous testimony of careful students of birds and their food habits, to the effect that almost all Hawks and Owls are beneficial, a wide-spread prejudice still exists against them. They are slain as relentlessly as if they were enemies instead of friends of the farmer.

The destructive habits of the small rodents, which are the natural prey of Hawks and Owls, are much the same all the world round. They do an incalculable amount of damage to standing corn, to corn in the stook or when stacked, to grain, to root crops when growing, or when piled on the ground, or stored in pits, to orchards and forest trees, to the roots of clover and other grasses, to ground-growing fruit, and to gardens, both flower and vegetable. In addition to this list of crimes, certain rodents are active agents in carrying and disseminating the germs of plague and other diseases.

Here in England—though on account of their small size and secretive habits they are often undiscerned by man's dull eyes—they swarm in such numbers in the fields and hedge-rows that the damage they do must prove a steady drain on the resources of the farmer.

The number of small rodents eaten by the rapacious birds is almost as remarkable in proportion to their size as is the number of insects eaten by small insectivorous birds. During the summer of 1890 a pair of Barn-Owls occupied a tower in a building at Washington. After their departure, there were found in the regurgitated pellets, with which the floor was strewn, 454 skulls of small rodents.

The young of Hawks and Owls remain a long time in the nest, and require a great quantity of food. During this period the resources of the parents must be taxed excessively in the effort to satisfy the hunger cravings of their offspring, and it is not to be wondered at if some individuals are forced occasionally to snap up a chicken. But what is the worth of the chicken, or of the young pheasant, occasionally taken compared with the hundreds of thousands of pounds' worth of damage that is wrought in the orchards and field by rodents that Hawks and Owls, had they been spared, would have fed upon for the maintenance of their species?

At one time the destruction of bird life in the United States was truly lamentable. But the old order has changed

—due entirely to the work of the Biological Survey in the interests of agriculture—and to-day the farmer is only too willing to admit that the bird is his best friend.

This is magnificent, and bygones should be bygones; but that you may realise the value of Hawks and Owls to man, I am obliged to rake up an ugly past.

In 1885 the Legislature of Pennsylvania passed an Act, known as the "Scalp Act," which provided a bounty of 50 cents each on Hawks and Owls killed within the State limits, and a fee of 20 cents to the notary taking the affidavit. As the result of this Act, 90,000 dollars was paid in bounties during the year and a half subsequent to the passage of the Act. But the vengeance of Nature's laws is speedy and never fails. An irruption of small rodents followed, and did damage to the agricultural interests of the State to the tune of 3,850,000 dollars. And even these figures, enormous as they are, do not represent the entire loss. Years must elapse before the balance of Nature, which was destroyed, can be restored.

In Montana the destruction of Hawks and Owls was so complete that rodents, freed from the pressure of their natural check, became as one of the plagues of the Book of Exodus. Then the Legislature passed a law offering bounties for the destruction of these four-footed pests. During six months of 1887 such large sums were paid out in bounties for the destruction of small rodents—a work that the Hawks and Owls had previously done free of charge—that a special Session of the Legislature was called to repeal the Act, lest it should bankrupt the State.

In 1907, Nevada went through a very trying experience with mice, while Utah, Wyoming, California, and several States further east have all had occasion to bitterly rue the day that they shot their Hawks and Owls.

But the destruction of small rodents is not the only function of rapacious birds in the economy of Nature. Several species are voracious insect feeders. Nor is this all. It is well known that when small insectivorous birds increase

abnormally in numbers they, too, become a pest. Hawks and Owls materially assist those other agencies of Nature which act as a check on the undue increase of small birds. If rapacious birds were rigorously protected in this country, we should have fewer complaints of the damage done by Sparrows.

It is a law of Nature that the destroyer is also the protector. Birds of prey, if unmolested, not only prevent the over-production of small birds, but they also confer a salutary benefit on each species on which they prey by checking the propagation of weakness or disease by killing off the sickly and most unfit individuals, for these are the most easily seen and the most readily captured. This is particularly true of game fowl, and one of the most plausible hypotheses explanatory of the occasional outbreaks of disease among Grouse has been the removal of this corrective by ignorant gamekeepers.

Yet it is my belief that nothing but a miracle performed by the Lord will ever make these men see the error of their ways.

Some years ago, when lying in the sweet-smelling heather on a mountain-side in Scotland, I pleaded for the life of the Hawk before one of its executioners. The gamekeeper listened in silence until my somewhat fervid address to the jury, so to speak, was concluded. Then he said: "Ye've a cold i' the heid." I did not see the relevancy of this remark, but I nodded assent. After a pause, he added: "Ah, weel; ye canna complain. The cold aye attacks the weakest place first."

The Economic Value of the White Heron.

The destruction of the White Heron for its scapular plumes—destruction which is marked by the most brutal savagery—has robbed half the world of a bird which is most useful to man. Its loss to India and to China is most serious. It never touches grain, but feeds solely near water and over damp ground, the breeding-places of

innumerable batrachians, small crustaceans, and pestiferous insects, all of which directly or indirectly injuriously affect crops in the neighbourhood. The presence of the White Heron in the rice-fields, for instance, is distinctly beneficial to the farmer, and rice is one of the most extensively grown crops of India and of China.

The slaughter of this bird in India is all the more reprehensible, not only because the bird is protected by law, but because the Hindus are strongly averse to the taking of animal life, on religious as well as economic grounds.

In no country in the world do insects impose a heavier tax on the agriculturist than in India, and it is infamous that the British Government should connive at the illicit export of the plumage of locally protected birds, not only because the very species that are relentlessly and clandestinely slain for their plumage are those that are most destructive to insects and other field and orchard pests, but because they are held sacred in the religious belief of a race that in conscientiousness and purity of mind is in no wise inferior to the Semitic.

I say this because Jews are the principal culprits in the matter of dealing in these contraband goods, and because there comes drifting into my mind, down from my old Sunday-school days, the recollection of being told that Jews were merciful children of the Merciful ; that they were the first in the world to preach about mercy to animals ; and that in their Temple there were no other images except those of birds.

Turning to Australia for a moment, before dismissing the question of the destruction of the Egret, I may mention that the slaughter of this and other wading birds for their plumage is causing in that country a decline in its fish resources. As these birds grow fewer in numbers, so do the crustaceans that destroy the fish-spawn increase in hosts.

Value of Birds to Livestock.

The injury done to domestic animals by biting and parasitic insects is very great. Herds of cattle are often

stampeded by these tormenting creatures, which carry disease and death among them. Another great affliction is the warble, which is a small tumour produced by the larva of the gadfly on the backs of cattle, and the constant irritation of which causes considerable depreciation in the value of hides, besides a lessened quantity and poorer quality of beef.

Horses, sheep, and other farm animals are subject to the attacks of similar parasites and other persecuting insect foes.

If it were not for the services the bird renders in alighting on animals in search of these parasites, or in catching the flies on the wing, or in eating them in their embryo state, man would be unable to keep his livestock.

More than this, man himself would be unable to inhabit many places on the earth which he now cultivates, or where he carries on other lucrative industries.

For every fly-catching or parasite-eating bird of the untold thousands that are now allowed to be killed, Nature's fight for the care of her children is weakened by the loss of a very active agent.

Not long ago Sir Harry Johnston told us that the continual destruction of certain birds in Africa for their plumage was resulting in the increase of the venomous tsetse-fly, whose bite carries the infection of that dread disease, sleeping sickness.

The Bird as a Weed Destroyer.

Unquestionably weeds serve a useful purpose in Nature, but that purpose is not the occupation of cultivated land. Without check they would speedily choke all grain to death.

Constant use of harrows and hoes will do much on farm lands and in gardens to keep down weeds, but as most earth is full of weed seed, which retains its vitality for years, the life of the tiller of the soil is one continuous struggle against these troublesome plants. In this battle the bird is of great

assistance, for the number of weed seeds eaten by birds on cultivated land must be beyond any assignable quantity.

One of the greatest weed destroyers is the Quail. It is doubtful, indeed, if the Quail is not more useful to man than any other bird. It is very nearly wholly beneficial. During spring and summer it feeds on many of the most destructive of insects, and in autumn and winter it eats an enormous amount of seeds of many harmful weeds.

The report of the United States Biological Survey says :—

"It is reasonable to suppose that in the States of Virginia and North Carolina from September 1 to April 30 there were four Quail to each square mile of land. The crop of each bird holds half an ounce of seed and is filled twice a day. Since, at each of these two daily meals harmful weed seeds constitute at least half the contents of the crop, a half ounce daily is consumed by each bird. On this basis, the total consumption of harmful weed seeds by Quail from September to April in Virginia and North Carolina amounts to 1341 tons. As destructive insects form about one-third of the bird's food from June to August, Quail consume 341 tons of these pests in these States within those two months."

But perhaps the most valuable service that Quail render the people of the United States is the greedy way in which —and they stand almost alone among birds in this particular taste—they eat the evil-smelling potato-bug or, as we call it, the Colorado beetle.

In addition to this inestimable service it is partially due to this bird that that pernicious thing, the cotton boll weevil, has not swept over the entire cotton belt of America, bringing ruin to thousands of human beings on both sides of the Atlantic.

As I am speaking of the Quail, what I am about to say may not seem, for the moment, pertinent—but it is.

According to statistics published in April by the Government Biological Survey at Washington, it is shown that the cost of living last year in the United States was raised to cover a loss of one billion dollars in agricultural produce,

due to the inroads of insects and rodents. Or, to put this clearer, the damage done by these pests in the past year amounted to over ten dollars per head for every person in the United States. This loss, it is pointed out by the Government experts, is due largely to the lack of a sufficient number of insect and rodent-eating birds to keep the enemies of the crops in check. This means, letting our thoughts range beyond the United States, that for every bird killed that can be classed as beneficial, man must pay in increased costs of food and clothing.

There is therefore—now that Great Britain has harnessed Old Nile—a plain economic reason for revolt against the present-day practice of catching Egyptian Quail and shipping them by hundreds of thousands to Europe and to America.

The Bird as a Scavenger.

The fishing population of these islands has declared war on the Gulls, and is demanding the withdrawal of certain species from the list of protected birds on account of the damage they are alleged to do to the fishing industry. People who believe fishermen's tales are apt to be duped and led into repeated errors. The Gull is a surface feeder. It may occasionally levy toll on useful fish when they are indiscreet enough to come to the surface of the water, but to say that they do any appreciable injury to the fishing business is absurd.

On the other hand, the presence of the Gull is essential to man's health. While the bird fulfils many useful minor offices—such as destroying larvæ in land along the seaboard, and in eating enemies of fish that are exposed during low tide—its chief function in the economy of nature is that of scavenger of the harbours and of the littoral, just as Vultures are the scavengers of the mainland. I do not know if any of you have been in the East or in Mexico. If you have you will know that Vultures are protected both by law and public sentiment because of their sanitary services. But to return to the Gull. The wholesale destruction of the birds for their

plumage in Yucatan was followed by a great increase of human mortality among the inhabitants of the coast, which mortality was irrefutably due to the loss of the birds that formerly assisted in keeping the harbours and bays free from the decaying matter which the sea is constantly casting ashore.

I wonder if these men who wish the Gull destroyed ever give a thought to what would happen to their own smelling villages if this bird was not present to eat the refuse they throw about? Or, again, if they ever reflect on that feeling of relief they experience when, in thick weather, they hear, through the fog, the clamour of these feathered bell-buoys, warning them that they are nearing rock or bar.

The Bird as a Guano Producer.

Now that I am on the subject of pelagic birds, I will speak of their value as guano producers.

Undoubtedly the present enormous trade in fertilisers owes its origin to the bird, for the fertilising properties of the phosphoric acid and nitrogen contained in fish was not recognised until guano—which is the excrement of sea-birds mixed with fish—became a stimulus to intensive agriculture, and furnished a source of revenue to civilised nations.

It is true guano has depreciated in price since the manufacture of fertilisers, but it has still a considerable commercial value.

Because of this, and because their slaughter is characterised by practices which are abominable and full of horror, tolerance of the wholesale destruction of sea-birds on their breeding-grounds by the agents of feather-dealers is a blot on our civilisation.

Not many years ago, William Alanson Bryan, United States Special Inspector of Birds, reported that on several islands in the North Pacific—which islands are the property of the United States, and legally established bird reservations—he walked waist-high through heaps of dead Albatrosses, Terns, and Gulls, the feathers of which had been stripped off to be sold as hat-trimmings, and the bodies thrown aside to rot.

On other islands he found that the immense colonies of birds which hitherto had bred there had been wiped absolutely out of existence.

Last year a gang of plumage pirates were surprised in their dastardly work on Laysan Island, which is in the same region, and which is famous for its rich deposits of guano. These miscreants had already clubbed to death on their nests, or when feeding their young, 259,000 Albatrosses.

Albatrosses lay but one egg, and as they can be killed with profit to the feather-dealer only when massed on their breeding-grounds, their destruction, at this appalling rate, must inevitably mean the loss to the United States of its guano supply.

It is my opinion, though the British Government is not in agreement with me on this question, that every agent that conserves the natural resources of the present millions, as well as the heritage of unborn millions, should be given every measure of protection.

Usefulness of the Bird to Man as Food.

So far I have considered only the good offices the bird voluntarily takes on itself in the service of man.

I will now proceed to show how invaluable the bird is to man, under certain conditions, as a food-supply. The flesh-pots of the world have been already acquired, and man is now reaching out for less favoured regions upon which to domicile his increasing millions. This action of his produces the pioneer, who must, for the most part, live on the wild products of forest, mead, river, lake, and sea. Now let us consider how a scarcity of birds will affect these hardy forerunners of civilisation who drive the plough in the trail of the axe. The sore straits to which they will be put will be best understood, perhaps, by viewing the results of the slaughter of the Duck in North America. Not more than fifty years ago the number of these birds in that country was beyond computation. But man could not slay them fast enough to glut his blood-lust. Sportsmen, professional

hunters, and agents of the millinery interest smote them by the million. It is on record that hundreds of tons of these birds were killed merely for their green wing-feathers, and the bodies thrown away.

What the present-day slaughter of birds in the primitive places of the earth will mean to the pioneer of the future is foreshadowed by what is happening in Hudson Bay at the present time on account of the blind and wanton destruction of the Duck in North America in days gone by.

Ducks are now becoming so scarce along the west coast of Hudson Bay, where there are no moose, caribou are few, and the fishing is poor, that the people living there, who have always depended largely on the Ducks they could pack away in the autumn, find it difficult to get food enough to carry them through the winter.

I have not touched upon the æsthetic side of the question of the value of birds to man, since that is a boundless realm, sacred to sentiment, art, and poetry—a realm of which it would be impossible for me to treat this evening. Even as it is—and I am leaving unmentioned many a benefit that birds confer on man—I have already put too great a strain on your patience.

I have come to my last words upon my subject. Birds, unquestionably, are one of man's greatest possessions ; yet it is just the possession on which he sets the least value. Wherever there are birds whose feathers are suitable to millinery, there will the plume-hunter be found, dealing death and destruction. Wherever there are species that have been harried by man to the verge of extinction, there will be the collector also, anxious to obtain the last lingering representative of a race before his rival gets a chance to do so. Wherever there are birds whose eggs are valuable, there the egg-collector hurries, to destroy not only the embryo life, but often the mature life as well by killing the bird that laid the egg for the purpose of identification. Wherever there are birds that are considered "game," there hastens that vandal of creation, the "sportsman" of means

and leisure, to expend upon his harmless and helpless victims his barbarous, inherent desire to kill in response to instinctive promptings.

No member of that doomed race ever flies forth in the morning with any certainty that it will return, for there is always the man with the gun waging war against it, and his instrument of destruction annihilates space and is beyond the power of escape.

It is the nature of infamies, as well as diseases, whose progress is not checked, to daily grow worse; and if this wasteful and depraved practice of killing birds wholesale is not checked there will be wrought a mischief, a universal disease, more far-reaching than words can express.

XIV.—*Occasional Notes.*

5. Bird Migration in South Africa.—In accordance with the resolution passed at the last Annual General Meeting, to the effect that an attempt be made to infuse a little more interest as regards Bird Migration, the Council desire the Members of the S.A.O.U.—and others willing—to undertake a few simple observations during each year. We appeal especially to the school teachers, for whom we have now created an associate membership paying a nominal subscription of half a guinea per annum, which covers receipt of Journal, Popular Bulletin, and any other publication which might be issued. The Transvaal Education Dept. have been good enough to have a series of wall-pictures printed depicting some of the more interesting birds, so that identification of some of the following will be now comparatively easy.

You are asked to look out for the arrival and departure of any or all of the undernoted kinds: —

1. European Bee-eater (*Merops apiaster*).
2. Red-legged Kestrel (*T. vespertinus*).
3. European Swallow (*Hirundo rustica*).
4. Golden Oriole (*Oriolus galbula*).
5. Lesser Kestrel (*Tinnunculus naumanni*).

6. European Cuckoo (*C. canorus*).
7. Greenshank (*Totanus littoreus*).
8. White Stork or Large Locust Bird (*Ciconia ciconia*).
9. Black-winged Pratincole or Little Locust Bird (*Glareola melanoptera*).

We would ask all observers to carefully note the dates of arrival and departure—*i. e.* the first and last dates upon which each of the above birds were last seen—on one of the post-cards enclosed for the purpose, and post the same. If possible also note the force and direction of the wind, *i. e.* N., N.E., N.W., &c., as the case may be, and gentle, medium, strong or very strong, whichever obtains at the time the birds were first seen. Any other observations, such as "arrival in flocks" or pairs, would be of interest.

The cards could either be posted immediately after the arrival of each species, or retained and posted once a month. Unless the observer is a regular one, the former course would be preferable.

The question of the migratory movements of birds—what governs it, whence they come, where they go, &c.—is an all-absorbing one, so we would exhort all Members to lend their assistance, or if they find that they cannot manage it themselves they might induce someone else to undertake the observations—as the local schoolmaster or resident minister, for instance.

Those not sure of the identity of a bird can sever and forward one wing, a leg, the tail and the beak, which will generally suffice to distinguish a bird with some degree of certainty.

The response to this Circular when first issued was very poor, and we would again urge upon our readers the importance of this matter. If they have not the time to make a regular habit of observing, let them take one or two birds—the European Swallow, for instance, and watch for its arrival. This bird is easily recognisable from others of its kind (with one exception) by its small size, reddish forehead, chin, and throat. The only species it can easily be confused with is the White-throated Swallow, which has the

throat white, and in addition the sides of the neck—these white portions being very conspicuous even when the bird is on the wing. The South African Swallows are larger and have a reddish rump and striped underparts, which the European Swallow does not possess.

Much valuable information has of late years been collected in S. Africa on the movements of the White Stork, and many birds have been shot or picked up dead with an aluminium ring on the leg bearing a No. and letters, placed thereon by kindred European Societies. Please watch for these, and any found should be forwarded to the Transvaal Zoological Gardens, Pretoria, with all data.

We sincerely hope that a genuine effort will be made by our Members and the teachers to identify themselves more closely with the work of the Union, and render what assistance they can.

Note.—Copies of this circular and a supply of post-cards can be obtained on application to the Hon. Secretary, South African Ornithologists' Union, Transvaal Zoological Gardens, Pretoria. The Secretary will also be pleased to receive applications for membership at all times.

Alwin Haagner, *Sec. S.A.O.U.*

XV.—*Short Notices of Ornithological Publications.*

9. *The Game Birds and Waterfowl of South Africa.* By Major B. R. Horsbrugh, A.S.C., &c. With Coloured Plates by Sergt. C. G. Davies, C.M.R.

We have now received Part II. of this lovely work (see review of Part I. *suprà* p. 73), which seems an improvement on the first part all round. The species dealt with are the Francolins—Crested, Kirk's, Grey-wing, Cape Red-wing, Orange River, Büttikofer's, Shelley's, Red-billed, Natal, and Cape; the Red-necked Francolins—Humboldt's, Northern, Southern, and Swanison's; the Cape and Harlequin and Blue Quails: and the Kurrichaine Button-Quail. As already

stated, the work should be in the hands of every sportsman and naturalist in the sub-continent, as Mr. Davies's beautiful plates render the species easy of recognition. Messrs. Witherby & Co., of 326 High Holborn, London, who are the publishers, deserve every credit for the reproduction.

10. *The Journal of the East Africa and Uganda Natural History Society.* Vol. ii. No. 4.

In an otherwise interesting number of this publication we find only two short ones dealing with ornithological subjects, viz., "The Flight of the Marabou Stork," by F. J. Jackson (in which he tells us that the Marabou holds its legs out behind and folds up the neck like an Heron, with this difference, that whereas the latter carries bill and legs horizontally those of the Marabou are depressed and pointing slightly downwards). Mr. Woosnam gives new localities for Hubbard's Francolin.

11. *A Hand-List of British Birds.* By Ernst Hartert, F. C. R. Jourdain, N. F. Ticehurst, and H. F. Witherby. Demy 8vo. Price 7*s.* 6*d.* net. Witherby & Co., 326 High Holborn, London, W.C.

A work which gives a detailed account of the distribution of each species in the British Isles and a general account of its range abroad, with details of the occurrences of rare visitors. The nomenclature is revised strictly in accordance with the International Rules of Zoological Nomenclature, and trinomials are largely employed. Exact references to the original description and locality are given, which makes the book of considerable value. An index is provided.

12. *The Flight of Birds.* By F. W. Headley. With 16 Plates from Photographs and many Text Diagrams. Crown 8vo. 5*s.* net. London : Witherby & Co., 326 High Holborn, W.C.

This book is a simple account of the flight of birds. Though an ornithologist and not an aviator, the author keeps the aeroplane in view, and compares and contrasts it with the bird.

13. *The Birds of Africa.* By Captain G. E. Shelley. Vol. v. part 2. Completed and edited by W. L. Sclater, M.A., F.Z.S. Henry Sotheran & Co., 43 Piccadilly, W.

Captain Shelley got as far as part 1 of vol. v. of his now well-known work on South African Birds, when a stroke of paralysis rendered him in 1906 unfit for further work. He died on 29th November, 1910, but shortly before his death Mr. W. L. Sclater was asked by Mrs. Shelley to undertake the completion of the work. The present part was accordingly brought up to date, revised, and put through the press, and the publishers hope to see the work completed with another four or five volumes. The present part deals with the Section Lanii, comprising, amongst some Madagascar genera which do not concern us, the Dicruridæ or Drongo Shrikes, the Campophagidæ or Cuckoo Shrikes, and the Laniidæ or True Shrikes. Amongst the eight beautiful plates by Mr. H. Grönvold we have figures of *Nicator chloris*, *N. gularis*, and *Eurocephalus anguitimens*. There are again some changes of nomenclature, our Common Shrike being called *Fiscus collaris*, the genus *Lanius* being retained for the "*minor*" group only. The Red-backed Shrike, so well-known as *Lanius collurio*, is called *Enneoctonus collurio*, while the genus *Pomatorhynchus* (better known to English ornithologists as *Telephonus*) is now called *Tschagra*. Mr. Sclater considers *Pomatorhynchus* of Boie untenable, because it was evidently a misprint or a correction of Horsfield's *Pomatorhinus* given to the Scimitar-bills of the Oriental Region. The genus *Pelicinius* is discarded in favour of *Telophorus* of Swainson, owing to the type of the former being *Lanius barbarus*, Linn., which makes *Pelicinius* synonymous with *Laniarius*. It will be a fortunate thing for ornithologists when scientific names have been settled once and for all by an international congress.

The 'Birds of Africa' should be in the hands of every serious student of African Ornithology. It is well got up, clearly printed, and exhaustive.

NAME INDEX.

D.

E.

F.

T.

U.

V.

W.

Y.

Z.

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THE JOURNAL

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CONTENTS.

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Pretoria,
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EDITORIAL NOTICES.

The Editors invite contributions on South African Ornithology from all students. These should, if possible, be typewritten.

Drawings (which, for the purpose of ease of reproduction, should be, as far as possible, in line and without wash) and photographs from nature will be gladly welcomed. Original MSS., drawings, and photographs will, if desired, be returned, after publication, to their owners.

The Editors will be pleased to receive from contributors short extracts from concurrent literature or accounts of the Meetings of Associations dealing with South African Ornithology or of general interest to the Members of the Union.

All documents intended for publication should be forwarded to A. Haagner, Esq., Transvaal Zoological Gardens, Pretoria.

This Journal will be issued as often as the funds of the Union permit, subject, of course, to there being sufficient matter suitable for publication.

Fifteen copies of every paper published in the Journal will be reserved for the author free of charge.

The Editors will be pleased to answer, to the best of their ability, through the medium of this Journal, any questions relating to ornithological matters, and to identify ornithological specimens submitted to them.

In cases where an immediate answer is required, a reply will be forwarded through the post if a stamped addressed envelope is enclosed with the enquiry.

The Editors respectfully draw attention to the necessity for support to the Illustration Fund, and invite subscriptions thereto.

THE SOUTH AFRICAN ORNITHOLOGISTS' UNION.

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